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UNITED STATES LOBSTER AND SPINY LOBSTER PRODUCTION (1921-49) AND IMPORTS (1920-49)

By Leslie W. Scattergood* and D. Arthur McKown**

ABSTRACT

UNITED STATES PRODUCTION AND IMPORTS OF LOBSTERS AND SPINY LOBSTERS ARE DISCUSSED IN THIS ARTICLE FOR THE PERIOD 1921-49. THE PRINCIPAL LOBSTER FISHERY IN THE UNITED STATES IS IN THE NEW ENGLAND AREA. ALTHOUGH SOME SPINY LOBSTERS ARE PRODUCED IN FLORIDA AND CALIFORNIA, THE AMOUNT IS NEGLIGIBLE AS COMPARED WITH THE TOTAL PRODUCTION OF LOBSTERS AND SPINY LOBSTERS. THERE HAS BEEN A LARGE INCREASE IN THE UNITED STATES LOBSTER CATCH SINCE 1950, BUT THE INCREASE IN THE IMPORTS OF LOBSTER AND SPINY LOBSTERS HAS BEEN EVEN GREATER. SINCE THERE ARE NO GREAT UNEXPLOITED AREAS IN WHICH TO INITIATE NEW LOBSTER FISHERIES, FURTHER INCREASE IN DOMESTIC PRODUCTION IS DEPENDENT ON THE BIOLOGICAL PRODUCTIVITY OF THE STOCKS IN THE NORTH ATLANTIC REGION. GREATER IMPORTS ARE ANTICIPATED IN THE FUTURE, SINCE EXPANSION OF THE UNITED STATES MARKET FOR LOBSTERS AND SPINY LOBSTERS IS INDICATED.

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INTRODUCTION

United States production and imports of lobsters and spiny lobsters have increased markedly within the last several decades. Several accounts of the magnitude of lobster and spiny lobster imports into this country have been prepared. In 1940 and 1941, at the request of the North Atlantic Lobster Conference (an organization formed by the representatives of government and industry in the various lobster-producing states) the senior author prepared several unpublished reports on lobster imports and their relation to the domestic fishery. Chase and Dumont (1949) discussed the recent trends in the spiny lobster fisheries of the world, and presented data on the imports of these crustaceans. It is the purpose of this article to bring up to date the recent developments in the consumption of lobsters and spiny lobsters in the United States.

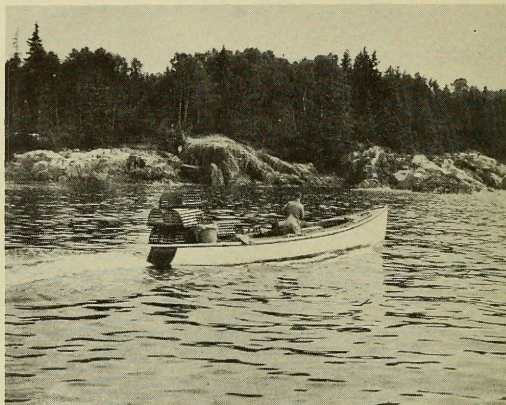
The references to "lobster" pertain to the North Atlantic species Homarus americanus and H. vulgaris, the common or northern lobsters of North America and Europe. References to "spiny lobsters" include the crustaceans also known as sea crawfish or sea crayfish. The principal species of spiny lobsters imported into this country are Panulirus argus from the Caribbean area, P. interruptus from the Pacific coasts of Mexico and Central America, P. longipes from Australia, and Jasus lalandei from Africa, Australia, and New Zealand.

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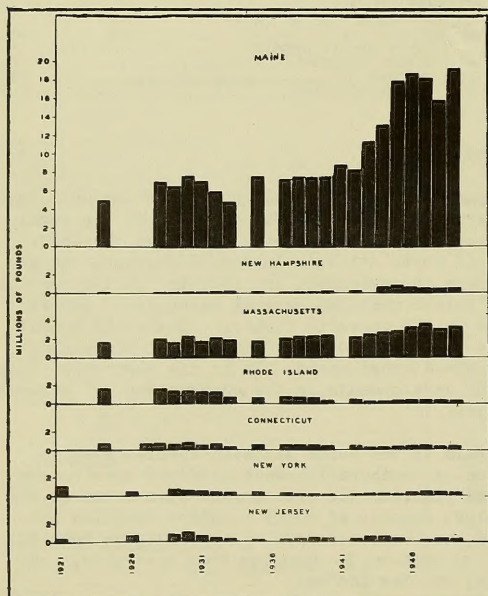
DOMESTIC LOBSTER PRODUCTION

Northern lobsters in the United States are caught in commercial quantities along the Atlantic seaboard from the offshore waters of North Carolina and Virginia north to the Canadian boundary. Table 1 and Figure 1 show the landings of lobsters in these States since 1921. Note that no statistics are given for northern lobsters caught south of Delaware. The quantities of northern lobsters captured in the waters adjacent to the southern limit of their range is less than 100,000 pounds a year--insignificant in comparison to the total United States production. In 1949, the total U. S. production of northern lobsters amounted to 24,656,000 pounds, valued at \$8,903,000 to the fishermen.



MAINE LOBSTER FISHERMAN SETTING OUT HIS "POTS" OR TRAPS.

The most striking feature of these data is the great increase in the lobster catch since 1940 when the total United States yield of the lobster fishery was less than 12 million pounds. In 1947, by comparison, almost 24 million pounds were landed in the New England and Middle Atlantic States alone. Landings dropped to about 21 million pounds in 1948, but the 1949 catch was reported as 24.7 million pounds.



Maine is the greatest producer of lobsters in this country, and the almost spectacular increase in the United States catch has been largely a reflection of the status of the fishery in that State. According to the records, the 1949 catch of over 19 million pounds was the largest since 1889 when 25 million pounds were caught. Both New Hampshire and Massachusetts have shown similar increases in catches since 1940. While lobster production in southern New England and in the Middle Atlantic States has fluctuated considerably since 1921, the production there is too small to significantly affect the totals.

FIG. 1 - NEW ENGLAND AND MIDDLE ATLANTIC LOBSTER CATCH BY STATES FOR THE YEARS IN WHICH STATISTICAL SURVEYS WERE MADE.

Table 1 - New England and Middle Atlantic Lobster Production, 1921-49^{1/}

Year	Maine		New Hampshire		Massachusetts		Rhode Island		Connecticut		Total	
	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)
1921	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-
1924	5,513,002	1,772,165	125,600	40,000	1,679,601	557,437	1,696,346	462,000	701,647	240,809	9,716,196	3,072,411
1925	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	673,010	257,720	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-
1928	7,100,332	2,013,451	130,099	40,785	2,042,331	761,561	1,637,659	357,103	693,556	240,961	11,603,979	3,413,961
1929	6,250,613	1,934,346	125,198	41,684	1,630,331	591,237	1,353,515	341,568	592,607	230,373	10,382,466	3,133,193
1930	7,750,638	2,007,243	130,597	40,363	2,339,234	825,946	1,353,107	315,550	734,712	293,366	12,387,328	3,217,466
1931	7,156,010	1,633,684	143,233	50,151	2,245,753	627,188	1,259,173	269,231	497,454	138,168	11,312,013	2,719,432
1932	6,056,932	1,090,741	219,303	44,479	2,146,371	433,404	1,257,274	303,255	509,309	141,148	10,270,119	1,915,027
1933	5,897,335	1,000,094	216,929	48,230	1,928,616	381,649	708,095	113,933	336,800	64,135	9,088,125	1,608,041
1934	-	-	-	-	-	-	-	-	-	-	-	-
1935	7,697,900	1,767,498	194,400	49,323	1,305,300	449,327	619,000	132,690	546,400	122,136	10,852,300	2,520,224
1936	-	-	-	-	-	-	-	-	-	-	-	-
1937	7,348,500	1,387,436	153,800	37,311	2,134,900	560,291	773,500	173,083	522,900	140,712	10,935,900	2,304,033
1938	7,695,200	1,310,013	170,200	37,272	2,313,100	499,410	709,700	159,976	553,500	136,047	11,407,800	2,143,613
1939	7,570,800	1,208,924	178,900	33,868	2,337,900	472,102	635,600	124,504	508,200	125,115	11,511,500	1,963,513
1940	7,643,000	1,291,228	236,800	44,302	2,438,500	467,177	372,600	86,494	475,400	110,865	11,165,300	2,000,566
1941	8,287,100	1,605,719	-	-	-	-	-	-	-	-	-	-
1942	8,403,800	1,820,262	232,200	60,159	2,254,000	623,174	432,700	108,177	408,000	115,536	11,791,500	2,740,308
1943	11,468,000	2,934,303	453,000	136,500	2,513,700	791,090	292,400	62,592	230,500	63,081	14,964,900	4,027,556
1944	13,250,100	3,313,368	686,400	171,950	2,741,200	928,989	334,500	117,100	291,500	116,125	17,203,400	5,147,532
1945	17,988,800	7,361,748	883,700	347,954	2,873,900	1,309,546	266,700	133,330	314,400	154,771	22,266,900	9,307,369
1946	18,779,500	7,186,325	610,000	275,900	3,234,100	1,408,979	359,500	163,355	400,000	192,563	23,433,600	9,224,116
1947	18,277,200	6,816,196	520,000	213,200	3,671,400	1,389,513	392,700	180,701	455,100	217,956	23,316,400	8,717,566
1948	15,923,000	6,439,467	401,500	248,630	3,211,600	1,379,076	384,600	176,864	305,600	151,870	20,226,300	8,293,807
1949	19,270,700	6,696,961	413,900	166,360	3,563,000	1,405,385	354,600	155,859	388,300	169,058	23,994,500	8,593,623
M I D D L E A T L A N T I C												
Year	New York		New Jersey		Delaware		Total		New England and Middle Atlantic Total			
	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)
1921	1,037,395	196,762	397,941	89,538	10,400	2,600	1,445,636	297,900	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-
1926	455,218	130,716	643,286	193,549	20,640	6,202	1,119,144	330,567	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-
1929	647,061	173,589	765,567	198,882	12,600	3,790	1,425,228	376,251	11,747,694	3,508,449	-	-
1930	536,391	136,692	1,010,579	230,110	11,750	2,620	1,558,720	369,422	13,916,042	3,586,890	-	-
1931	483,846	121,887	653,634	167,687	11,250	2,814	1,148,730	292,388	12,460,749	3,010,820	-	-
1932	397,081	70,157	470,130	92,755	11,050	2,763	878,261	165,675	11,148,380	2,078,702	-	-
1933	346,496	67,256	364,220	67,629	12,840	2,568	723,356	137,453	9,811,681	1,745,494	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-
1935	420,500	87,167	218,900	50,754	4,100	1,025	643,400	138,946	11,495,700	2,659,170	-	-
1936	-	-	-	-	3,670	825	-	-	-	-	-	-
1937	365,800	75,693	268,800	56,073	4,300	1,290	639,900	133,061	11,575,800	2,437,094	-	-
1938	244,400	53,297	326,900	67,578	3,100	927	574,400	101,602	11,982,800	2,244,420	-	-
1939	233,500	47,743	432,900	65,108	5,900	1,840	672,300	114,691	11,938,800	2,073,204	-	-
1940	191,100	42,113	401,800	81,047	1,200	420	594,200	123,830	11,759,500	2,130,146	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-
1942	156,800	38,648	346,900	72,507	3,300	825	507,000	111,980	12,293,500	2,352,238	-	-
1943	205,000	73,285	563,200	131,079	4,500	1,125	772,700	205,489	15,737,600	4,233,045	-	-
1944	135,200	70,227	525,300	156,808	4,500	1,350	725,000	228,338	17,928,400	4,430,302	-	-
1945	140,100	59,630	315,600	93,680	4,500	1,350	460,200	153,660	23,727,100	9,461,023	-	-
1946	309,700	133,661	-	-	-	-	-	-	-	-	-	-
1947	417,300	203,442	191,800	69,290	-	-	609,100	272,732	23,925,500	8,990,298	-	-
1948	361,400	161,285	397,300	169,977	-	-	758,700	331,262	20,985,000	8,727,169	-	-
1949	345,100	160,635	315,200	145,165	300	75	659,600	309,075	24,654,100	8,902,698	-	-

- NO STATISTICAL SURVEYS WERE MADE DURING THOSE YEARS WHERE FIGURES ARE NOT SHOWN.

1/ FROM DATA PUBLISHED BY THE U.S. FISH AND WILDLIFE SERVICE AND THE FORMER U.S. BUREAU OF FISHERIES, EXCEPT FOR THE MAINE FIGURES, WHICH HAVE BEEN COMPILED BY THE MAINE DEPARTMENT OF SEA AND SHORE FISHERIES.

LOBSTER IMPORTS FROM CANADA AND NEWFOUNDLAND

In Canada and Newfoundland, the yield of the lobster fisheries has been much greater than in the United States. Table 2 and Figure 2 present the catch of Newfoundland and of the four Canadian lobster-producing provinces since 1920. It is obvious that, during the past few decades, the production there has not increased as markedly as in the United States. The 1945 catch showed an increase of 34 percent over that of 1940, but this augmented figure is much less than the increase of 93 percent in the United States.

While the Canadian and Newfoundland catches have not increased at the same rate as those in this country, the trend each year has been towards larger exports to the United States. Figure 3, based on the data in Table 3, illustrates this trend. In the decade 1920 to 1929, imports from Canada were about 58 million pounds, in the next decade (1930 to 1939), about 96 million pounds, and in 1940 to 1949 over 156 million pounds. During the same decades, "not canned"¹ lobster imports from Newfoundland rose from a ten-year total of 57 thousand pounds to about 2 million pounds, and finally in the last decade to over 11 million pounds. In 1949, the imports from Canada were the greatest in history. The recorded imports to this country from Newfoundland have declined in the last few years. This apparent decrease has occurred because Newfoundland has been shipping greater quantities of her lobsters to the United States via Canada. When this occurs, the imports are considered by the United States Bureau of Customs as originating in Canada, rather than in Newfoundland.

There are several reasons for the increasing importance of the United States as a market for Canadian and Newfoundland lobsters. The great decline in the overseas markets has been caused principally by monetary restrictions in other countries, particularly in Northern Europe. Because of the augmented demand for

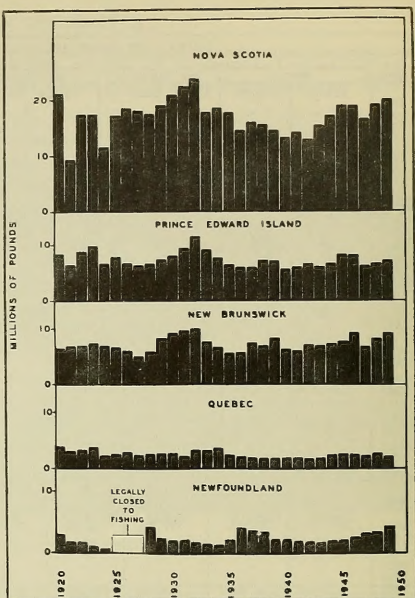


FIG. 2 - CANADIAN (INCLUDING NEWFOUNDLAND) LOBSTER LANDINGS BY PROVINCES.

Table 2 - Canadian and Newfoundland Lobster Production, 1920-49 ^{1/2}											
Year	Prince Edward Island		Nova Scotia		New Brunswick		Quebec		Newfoundland		Totals
	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds	Value (\$)	Pounds Value (\$)
1920	8,319,400	703,964	21,293,500	2,768,777	6,434,400	685,595	3,851,000	400,883	3,230,120	-	43,116,620
1921	6,381,600	525,954	9,311,500	1,622,680	6,646,500	510,398	3,031,100	153,633	1,950,960	-	27,521,660
1922	8,758,300	651,449	17,370,600	1,953,948	6,950,400	825,919	3,308,200	130,564	1,985,961	-	36,536,361
1923	9,745,600	798,797	17,272,000	2,239,107	7,368,500	921,831	3,776,400	338,172	1,284,860	-	39,447,650
1924	6,352,300	564,750	11,827,500	1,367,097	6,330,300	750,496	2,274,200	253,899	759,460	-	27,980,760
1925	7,857,000	681,095	17,059,800	2,140,228	6,388,400	801,949	2,587,500	210,554	2/-	-	34,083,900
1926	6,629,600	616,757	18,431,600	2,436,006	5,961,100	797,819	2,935,800	251,321	2/-	-	33,958,300
1927	6,280,000	617,057	17,967,300	2,433,107	4,975,200	694,212	2,460,600	217,698	2/-	-	31,683,100
1928	6,561,000	553,120	17,540,800	2,210,160	5,797,000	825,356	2,644,500	216,126	4,626,181	-	36,899,851
1929	7,359,000	621,467	19,003,500	2,156,776	6,186,200	853,690	2,733,300	210,063	2,763,282	-	40,045,282
1930	8,082,000	539,790	20,820,100	2,304,183	9,056,700	717,566	2,767,700	216,303	2,401,078	-	43,187,578
1931	9,415,000	553,676	22,264,900	1,946,037	9,499,600	736,000	2,270,300	119,474	2,416,212	-	45,956,212
1932	11,457,000	551,731	23,773,000	1,760,056	9,875,600	631,051	2,446,600	164,046	1,999,420	-	50,348,220
1933	9,154,700	396,248	17,685,000	1,223,980	7,494,000	514,579	3,157,100	161,318	1,793,746	-	39,285,346
1934	7,650,100	536,012	18,459,000	1,021,419	6,507,300	697,656	3,374,700	264,936	1,580,125	-	37,779,325
1935	6,897,000	407,504	17,583,000	1,313,774	5,385,100	592,309	2,342,600	166,901	2,417,386	-	34,014,786
1936	5,928,600	544,365	14,509,100	1,992,170	5,649,300	695,125	2,239,700	223,473	4,523,467	-	32,050,757
1937	5,823,800	524,847	15,096,100	2,304,302	7,258,600	713,801	2,016,500	206,668	4,140,844	-	30,135,944
1938	7,121,500	459,762	15,540,500	1,770,772	6,947,400	497,320	1,939,300	137,265	5,885,601	267,923	34,524,101
1939	6,927,000	464,429	14,421,200	1,640,483	6,105,200	632,564	1,851,600	129,378	2,756,481	204,516	34,000,881
1940	5,559,300	353,917	13,183,500	1,457,279	6,115,200	512,435	1,923,200	117,867	2,679,703	161,732	29,479,803
1941	5,995,100	469,153	14,073,400	1,676,447	5,885,000	634,544	1,848,800	131,761	2,372,343	276,201	30,140,643
1942	6,445,400	694,616	12,247,100	2,039,924	6,953,000	979,525	1,779,500	175,709	2,136,733	277,775	30,161,733
1943	5,971,900	999,830	15,574,300	2,489,756	6,864,000	1,421,912	1,968,000	324,364	1,899,716	245,372	32,008,916
1944	6,577,700	1,149,603	17,141,000	4,137,573	7,000,000	1,611,620	2,431,500	430,597	2,892,747	313,936	35,645,947
1945	8,115,800	1,503,647	16,894,200	5,619,077	7,385,500	1,940,120	2,534,300	520,130	623,656	39,010,212	10,406,600
1946	7,949,700	1,591,819	19,669,500	5,177,425	9,135,000	2,309,027	2,854,500	615,056	1,790,363	356,466	41,090,350
1947	6,094,000	1,010,000	16,564,000	5,232,000	6,690,000	1,544,000	2,305,000	369,000	3,405,945	850,103	35,059,945
1948	6,313,000	1,418,000	19,030,000	5,774,000	8,057,000	2,097,000	2,665,000	529,000	3,171,551	953,963	39,920,551
1949	7,031,000	1,369,000	19,928,000	6,236,000	9,110,000	2,108,000	2,096,000	369,000	4,000,000	1,000,000	42,167,000

^{1/2} DATA NOT AVAILABLE.

^{1/1} THE 1920-49 STATISTICS FOR PROVINCES OTHER THAN NEWFOUNDLAND OBTAINED FROM ANNUAL FISHERIES STATISTICS OF CANADA AND THOSE FOR 1947-49 TAKEN FROM THE MONTHLY SERIES OF CANADIAN FISHERIES STATISTICS. THE NEWFOUNDLAND STATISTICS FOR 1920-39 OBTAINED FROM TEMPLEMAN (1941), NEWFOUNDLAND GOVERNMENT RESEARCH BULLETIN NO. 71 (FISHERIES), AND THOSE FOR 1940-49 TAKEN FROM ANNUAL REPORTS OF NEWFOUNDLAND FISHERIES BOARD.

^{2/2} NOT FISHING BY GOVERNMENT ORDER.

^{1/} "NOT CANNED" COMMON OR SPINY LOBSTERS ARE THOSE WHICH ARE SHIPPED INTO THIS COUNTRY NOT HERMETICALLY SEALED IN CANS. COMMON LOBSTERS SO DESIGNATED ARE MAINLY LIVE LOBSTERS, WHILE SPINY LOBSTERS ARE PREDOMINANTLY FROZEN OR COOKED FROZEN MEAT OR TAILS. CANNED COMMON OR SPINY LOBSTERS ARE ALMOST EXCLUSIVELY COOKED MEAT HERMETICALLY SEALED IN CANS.

Table 3 - U.S. Imports of Lobster and Spiny Lobster, Not Canned, 1920-49/

Table 3 - U.S. Imports of Lobster and Spiny Lobster, Not Canned, 1920-1949												
Year	C O U N T R Y										Other countries	Total
	Canada	Newfoundland & Labrador	Cuba	British West Indies	British Honduras	Mexico	Union of South Africa ^{2/}	Australia	New Zealand			
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.		
1920	5,081,901	7	-	440	-	1,107,698	-	-	-	3,134	6,193,180	
1921	8,138,151	8,130	-	-	-	1,313,064	-	-	-	10,296	9,459,641	
1922	4,932,934	3,360	13,295	200	-	829,693	-	200	-	5,853	5,785,535	
1923	5,088,518	7,247	25,777	-	-	876,503	9,600	-	-	342,336	6,345,981	
1924	44,182,115	6,081	36,075	-	-	829,967	14,248	-	-	7,428	5,312,014	
1925	5,810,344	570	25,791	160	15,059	1,065,092	6,000	5,280	-	2,741	6,931,037	
1926	5,690,798	72	45,181	-	15,655	779,520	-	-	-	5,862	6,537,088	
1927	5,358,352	-	4,580	2,000	-	1,003,970	-	-	-	4,690	6,359,362	
1928	5,770,878	18,429	5,720	-	5,067	734,339	2,640	-	-	668	6,537,792	
1929	7,537,885	13,442	4,620	-	1,200	1,070,921	-	608	-	150	8,628,826	
1930	8,830,648	11,926	15,668	-	-	972,433	-	298	56	-	9,831,229	
1931	8,823,442	9,919	75,502	-	-	1,071,560	-	-	-	3,401	9,983,824	
1932	10,928,761	2,319	27,626	70,436	-	665,100	-	-	-	100	11,696,342	
1933	9,900,603	4,960	14,000	81,745	-	621,035	-	-	200	-	10,622,543	
1934	8,989,954	-	37,905	285,202	-	842,766	1,020	-	-	541	10,158,388	
1935	8,363,944	340	76,554	491,389	-	936,334	131,595	-	400	19,513	10,020,039	
1936	8,812,361	766	161,778	572,348	-	934,355	574,198	-	-	65,729	11,121,533	
1937	10,708,460	3,036	207,372	1,071,668	19,777	899,632	1,694,487	-	5,231	101,931	14,711,594	
1938	9,974,170	778,874	122,164	999,855	52,273	941,061	1,288,464	-	15,274	82,114	14,254,249	
1939	10,459,121	1,086,913	156,774	812,209	-	886,798	1,587,270	1,728	-	46,802	15,037,615	
1940	11,929,091	1,646,728	121,463	711,362	-	894,377	1,928,330	-	-	40,941	17,272,292	
1941	12,531,922	1,330,618	938,076	759,545	-	1,181,377	2,751,911	600	-	-	19,494,049	
1942	12,034,835	466,755	256,694	815,195	-	758,172	1,440,547	-	1,650	-	15,473,848	
1943	12,549,097	263,400	560,922	981,700	-	915,530	4,620,800	-	-	-	15,733,449	
1944	14,602,168	577,740	571,729	1,164,571	-	827,827	-	-	-	-	17,744,035	
1945	18,642,500	1,042,994	353,881	1,487,634	-	1,072,935	4,333,600	-	-	-	23,033,544	
1946	18,168,887	1,454,512	250,100	1,275,177	79,220	1,671,234	2,564,345	-	-	7,006	25,470,479	
1947	16,138,143	2,262,784	425,201	1,438,664	157,538	1,920,442	2,236,780	97,482	29,256	8,918	24,715,208	
1948	19,058,921	1,791,250	1,150,792	1,207,056	136,263	2,052,531	2,657,178	514,290	30,410	8,654	28,507,325	
1949	20,794,570	528,225	1,449,217	1,389,897	27,960	2,053,779	2,384,516	1,644,151	394,252	15,280	30,578,847	

- NONE REPORTED.

^{1/} FROM PUBLISHED RECORDS OF U.S. BUREAU OF THE CENSUS.

^{2/} INCLUDES SOUTH-WEST AFRICA.

* NONE REPORTED.

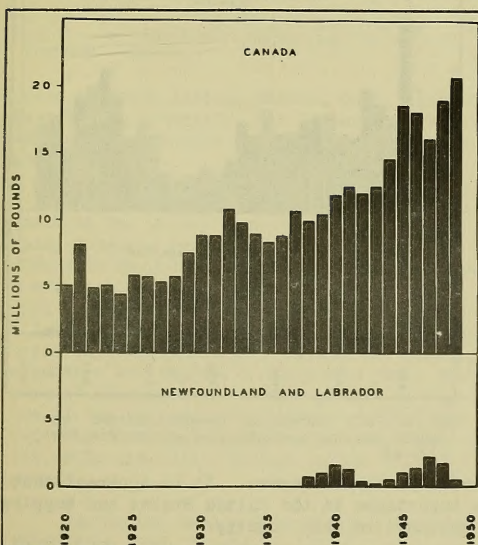
^{1/} FROM PUBLISHED RECORDS OF U.S. BUREAU OF THE CENSUS.^{2/} INCLUDES SOUTH-WEST AFRICA.

FIG. 3 - U.S. LOBSTER IMPORTS, NOT CANNED, FROM CANADA AND NEWFOUNDLAND (INCLUDING LABRADOR), 1920-49.

lobsters in the United States, due principally to the relatively prosperous conditions prevailing here, Canada and Newfoundland have been encouraged to export greater quantities to this country. This commerce has been encouraged further by modern transportation methods. The use of large refrigerated trucks and trailers has enabled the Canadians and Newfoundlanders to ship live lobsters to the United States market with relatively small losses. Since the demand for live lobsters is much greater and generally more profitable than that for the canned product, the bulk of the production is sent to the coastal cities in the New England States where the lobsters are marketed or are reshipped to other points in the country. Rockland and Portland in Maine, and Gloucester and Boston in Massachusetts are the principal ports to which the live lobsters are shipped. These cities contain extensive facilities for handling the crustaceans.

The imports of canned lobsters from Canada and Newfoundland have not shown the same trend as those not canned. Figure 4 illustrates the yearly fluctuations in the can-

Table 4 - U.S. Imports of Canned Lobster and Spiny Lobster, 1920-49/

Year	C O U N T R Y										Total
	Canada	Newfoundland & Labrador	Cuba	British West Indies	British Honduras	Japan	Union of South Africa ²	United Kingdom	Other Countries		
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.		
1920	3,056,222	133,945	-	-	-	14,786	43,296	6,140	372	3,224,761	
1921	1,490,196	41,588	-	-	-	17,004	8,000	30,610	507	1,587,905	
1922	1,741,851	34,016	10,201	-	-	162,984	54,560	359	80,465	2,084,165	
1923	2,070,791	15,175	22,912	-	-	3,460	57,300	5,300	21,428	2,145,948	
1924	1,204,516	2,484	64,463	-	-	9,900	156	129,512	3,482	1,421,679	
1925	1,274,064	2,060	12,251	-	-	55,297	200	51,500	11,444	1,450,597	
1926	1,586,696	560	35,768	-	-	40,309	-	72,120	28,973	1,792,139	
1927	1,579,512	915	14,532	4,560	-	56,938	-	100,520	8,215	1,780,293	
1928	1,473,150	42,551	20,476	-	-	12,600	-	49,686	1,997	1,605,986	
1929	1,304,164	128,376	15,340	-	-	240	-	43,293	816	1,490,194	
1930	1,270,300	32,857	12,822	-	-	-	1,500	25,200	1,505	1,345,137	
1931	1,648,818	22,390	1,540	-	-	106	-	21,760	237	1,702,721	
1932	1,257,550	19,764	5,903	-	-	-	-	1,278	7,493	1,270,721	
1933	1,441,982	16,214	7,073	705	175	-	-	1,071	766	1,468,614	
1934	830,967	9,430	63,631	-	-	80	-	13,673	512	918,293	
1935	636,697	4,220	104,122	7,751	-	-	-	116,707	3,086	897,637	
1936	583,507	16,675	106,741	10	-	240	-	46,810	2,250	6,682	
1937	591,138	17,020	82,214	16,219	-	14,950	-	103,222	1,567	8,086	
1938	505,164	5,556	101,878	23,351	-	89	-	84,787	1,538	2,065	
1939	643,142	20,006	212,361	40,907	-	-	-	25,023	-	5,024	
1940	1,231,177	10,868	314,027	35,962	-	-	-	56,137	-	5,140	
1941	1,424,082	5,328	140,034	220,475	-	-	-	121,250	-	1,911,169	
1942	1,165,181	1,197	321,190	271,340	-	-	-	54,544	-	1,823,452	
1943	1,809,957	7,652	396,686	58,982	-	-	-	-	-	2,273,277	
1944	2,300,339	56,351	532,077	21,576	-	-	-	-	-	2,475	
1945	1,917,627	88,597	455,375	-	-	-	-	-	-	2,535,589	
1946	1,850,074	120,747	461,329	-	-	-	-	-	-	2,432,375	
1947	980,751	89,950	122,359	-	-	-	-	1,325	-	18,541	
1948	1,541,026	97,884	294,449	-	-	-	-	722,151	-	36,412	
1949	1,370,790	33,805	165,248	-	-	-	-	526,004	-	3,821	

- NONE REPORTED.

1/ FROM PUBLISHED RECORDS OF THE U.S. BUREAU OF THE CENSUS.

2/ INCLUDES SOUTH-WEST AFRICA.

ned lobster imports, and the data in Table 4 show the imports of both canned lobster and spiny lobster. Comparing the past three decades, we find that 17 million pounds were imported in 1920 to 1929; less than 10 million pounds in 1930 to 1939; and 16 million pounds in 1940 to 1949. The trend has been downward since 1944.

DOMESTIC PRODUCTION OF SPINY LOBSTERS

The United States fisheries for spiny lobsters are carried on in the southern parts of Florida and California. Table 5 and Figure 5 show the available statistics of the landings in these two states since 1920. Like the data for the domestic catch of North Atlantic lobsters, the amounts represent the poundages of

whole crustaceans, live or cooked, landed by the fishermen. It is apparent that the spiny-lobster fishery is of minor importance in the United States and supplies only a small part of these shellfish consumed in this country.

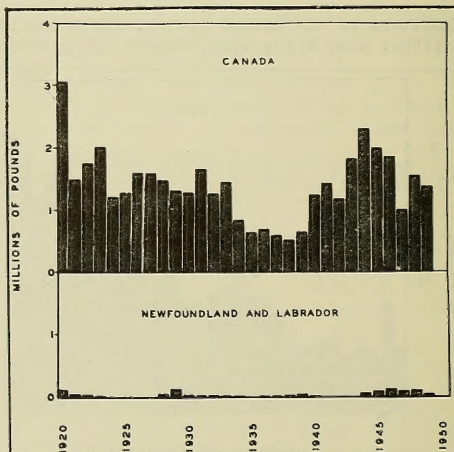


FIG. 4 - U.S. IMPORTS OF CANNED LOBSTERS FROM CANADA AND NEWFOUNDLAND (INCLUDING LABRADOR), 1920-49.

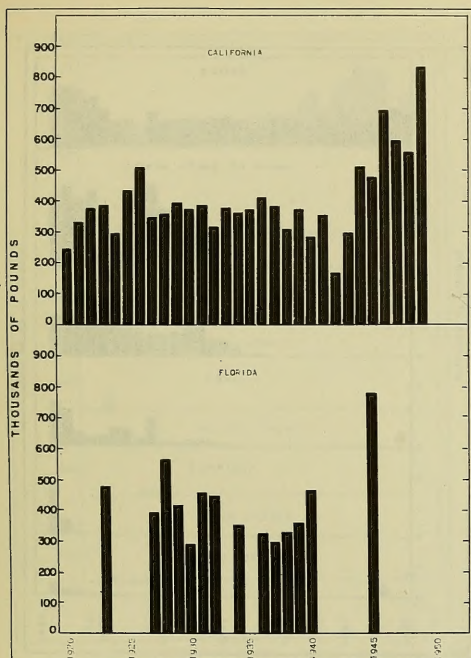


FIG. 5 - CALIFORNIA AND FLORIDA LANDINGS OF SPINY LOBSTERS, 1920-49.

Union of South Africa, Mexico, Cuba, British West Indies, Australia, New Zealand, and British Honduras consist entirely of spiny lobsters.

Figure 6, based on the data in Table 3, presents the yearly imports of "not canned" spiny lobsters from the five principal suppliers to the United States. A remarkable increase can be noted in the shipments since 1935 from the Union of South Africa, from the British West Indies, and from Cuba. Australia began marketing here in 1927 and has greatly augmented her shipments since that time. New Zealand (included with "all others" in Figure 6) has followed Australia's lead and has recently developed her spiny lobster fisheries, with the United States as the primary market.

During the decade 1920 to 1929 the total imports of live, frozen, or cooked spiny lobsters from the five principal sources (Mexico, Union of South Africa, British West Indies,

SPINY LOBSTER IMPORTS

Tables 3 and 4 give the imports of both the lobsters and the spiny lobsters. Since there is no distinction made in the import records between these two crustaceans, it is impossible to separate the two groups with certainty, at least from those countries which have well-developed foreign commerce and, therefore, may import for export lobsters or spiny lobsters from other countries in which both types of crustaceans are found. Thus, the imports from United Kingdom, Netherlands, Sweden, Belgium, Denmark, Germany, Norway, France, Spain, Portugal, etc., could be either common or spiny lobsters. Fortunately, most imports can be separated with fair accuracy. Imports from Canada, Newfoundland, and Labrador are almost exclusively, if not entirely, the common lobsters, while those from

Table 5 - Landings of Spiny Lobsters by United States Fishermen, 1920-49.

Year	California		Florida	
	Pounds	Value (\$)	Pounds	Value (\$)
1920	247,156	-	-	-
1921	334,271	-	-	-
1922	376,310	-	-	-
1923	384,381	76,876	477,210	27,685
1924	294,356	60,375	-	-
1925	432,059	89,207	-	-
1926	508,123	99,129	-	-
1927	346,421	71,898	391,253	31,707
1928	355,800	75,919	564,162	44,522
1929	396,774	90,610	413,266	36,681
1930	374,450	74,234	288,309	26,731
1931	382,611	62,532	455,907	41,530
1932	319,307	45,061	445,547	32,078
1933	380,475	53,353	-	-
1934	366,600	58,349	351,300	17,166
1935	371,600	64,542	-	-
1936	414,200	68,153	326,600	20,090
1937	385,900	71,991	292,500	21,621
1938	308,400	60,916	328,400	23,377
1939	376,900	71,968	359,200	24,382
1940	281,100	50,368	463,500	31,501
1941	357,300	63,549	-	-
1942	168,600	40,736	-	-
1943	298,400	93,247	-	-
1944	512,400	136,551	-	-
1945	479,100	114,812	777,100	157,427
1946	691,800	234,140	-	-
1947	593,400	189,372	-	-
1948	563,500	229,104	-	-
1949	834,300	283,325	-	-

- NOT AVAILABLE.

1/ FROM DATA FURNISHED BY THE U.S. FISH AND WILDLIFE SERVICE AND THE FORMER U.S. BUREAU OF FISHERIES.

Cuba, and Australia) were about 10 million pounds; in the next decade, the imports rose to 19 million pounds; and in 1940 to 1949, they were over 49 million pounds. In 1949, these five countries shipped about 9 million pounds to this country--almost as much as in the entire decade 1920 to 1929. As the fisheries for these crustaceans are developed in more areas, particularly in the Southern Hemisphere, a further increase in imports may be anticipated.

As Chace and Dumont (1949) have pointed out, the spiny lobster imports from Union of South Africa, Australia, and New Zealand are tails, which represent about one-third the weight of a live animal. Imports from Mexico, British West Indies, Cuba, and British Honduras include both tails and whole lobsters. Therefore, an increase in the poundages of the recorded imports of spiny lobsters from South Africa, Australia, and New Zealand represents a greater contribution of edible food than a similar increase in the imports of mixed whole crawfish and crawfish tails from countries in the Western Hemisphere.

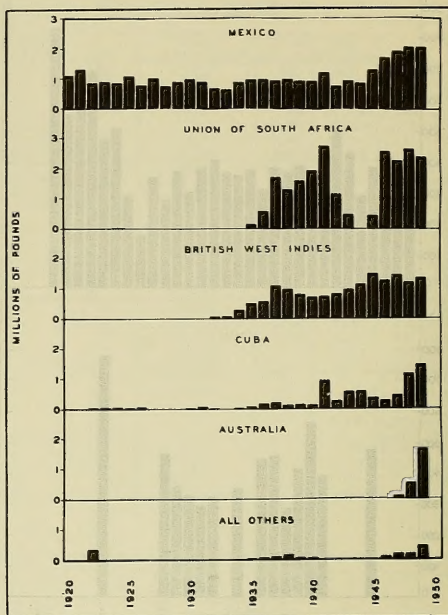


FIG. 6 - U.S. IMPORTS OF SPINY LOBSTERS, NOT CANNED, BY PRINCIPAL COUNTRIES OF ORIGIN, 1920-49.



MAINE LOBSTER FISHERMEN BAITING LOBSTER POTS AT SEA.

Imports of canned spiny lobsters have also increased during the last thirty years. The principal sources of our imports of canned spiny lobsters have been Cuba, Union of South Africa, and the British West Indies. As shown in Table 4, a total of about 8000,000 pounds was imported in the decade 1920 to 1929, increasing in the next decade to a total of 1,200,000 pounds; and increasing again in the period 1940 to 1949 to 5,300,000 pounds (see Figure 7). The increase of imports from Cuba between 1934 and 1944 and the decrease thereafter are also shown. The dominant position of South Africa since 1948 as the principal supplier of their product on the United States market is evident. The yearly totals of imported canned spiny lobsters

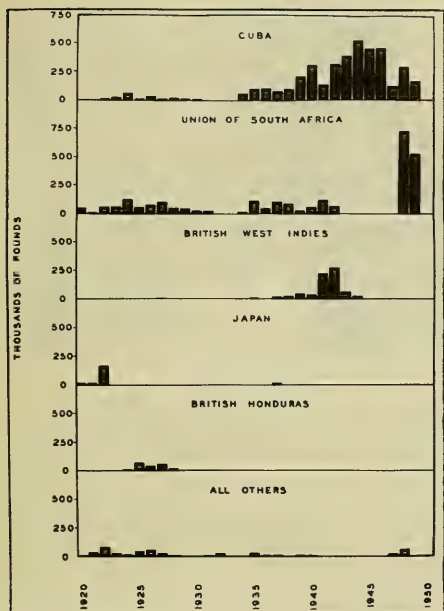


FIG. 7 - U.S. IMPORTS OF CANNED SPINY LOBSTERS BY PRINCIPAL COUNTRIES OF ORIGIN, 1920-49.

are much less than the "not-canned" product, which the American public seems to prefer. With the increasing popularity of frozen foods, the foreign spiny lobster industries are increasing their processing facilities. The canning of these crustaceans will, of course, continue to supply these markets without refrigeration.

EFFECT OF IMPORTS

Many lobstermen, particularly those in New England, believe that the prices which they receive for their catches are greatly influenced by the imports of lobsters, especially those from Canada and Newfoundland. There can be no doubt that the increasing imports of lobsters from these two regions do affect prices. Fortunately, because of the high level of prosperity in the United States, the great quantities of imports and the large domestic production have been absorbed placing undue economic hardships on the New England lobster fishermen. Figure 8 reveals that the estimated total United States production and imports of lobsters and spiny lobsters have risen from a low of about 19 million pounds in 1924 to a high of over 59 million pounds in 1949.

Most New England fishermen are not concerned very much about the spiny lobster imports, since relatively few are marketed in New England. The spiny lobsters, how-



USING A DOUBLE-ENDED ROWBOAT, A MAINE LOBSTER FISHERMAN IS HAULING IN A LOBSTER "POT" OR TRAP.



LOBSTER FISHERMAN OFF THE COAST OF MAINE MEASURING A LOBSTER TO SEE WHETHER OR NOT IT COMES WITHIN THE LEGAL-SIZE LIMIT.

PACKING AND WEIGHING LIVE LOBSTERS FOR SHIPMENT.

ever do compete with the common or northern lobster, particularly in restaurants in which various dishes can be prepared from either. Because the frozen spiny-lobster meat or tails can be purchased much more cheaply than the whole northern lobsters or their meat, restaurants are using greater quantities of spiny lobsters. However, the competition has not yet been felt to any great extent in New England where most of the North Atlantic lobsters are marketed. The public has accepted the spiny lobsters, not necessarily as a substitute for the northern lobster, but rather as a new form of sea food.

OUTLOOK

Further increases in the domestic production of lobsters are dependent upon the biological productivity of the lobster

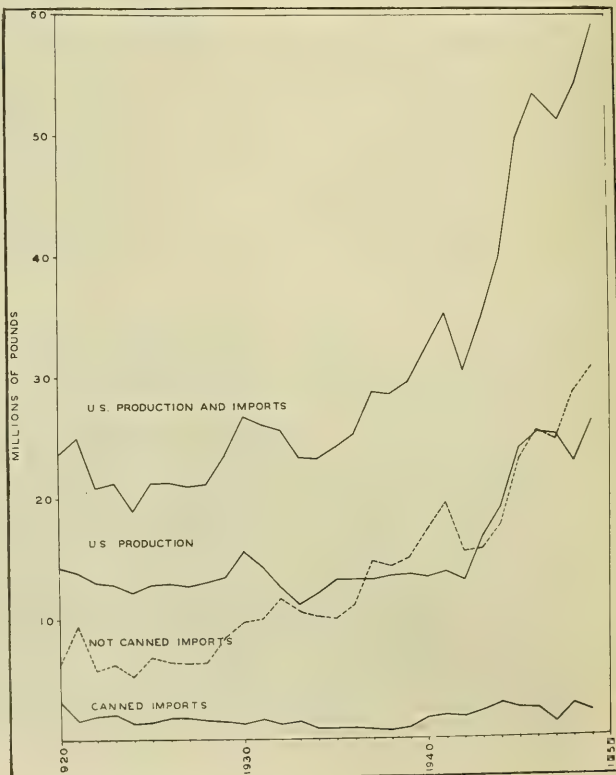


FIG. 8 - U.S. PRODUCTION AND IMPORTS OF LOBSTERS AND SPINY LOBSTERS, CANNED AND NOT CANNED, 1920-49.

populations in the North Atlantic region, for there are no great unexploited areas in which to initiate new fisheries. The spiny lobster fisheries outside the United States, however, are capable of expansion. If our market for these crustaceans continues to develop, we may anticipate greater imports in the future.

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1949. SPINY LOBSTERS--IDENTIFICATION, WORLD DISTRIBUTION, AND U.S. TRADE. COMM. FISH. REV., VOL. 11, NO. 5, (MAY 1949), PP. 1-12, ILLUS.



GROWTH OF SOUTH AFRICAN FISHERIES

The South African and South-West African fishing industries have a total capital investment and reserves of \$21,260,000, having a current market value of \$40,440,000, based on an approximate total annual catch with a wholesale value of \$13,800,000.

The growth of the over-all catch has been significant. Pilchards (Sardina sagax) now outrank crayfish (Jasus lalandii) and stockfish (Merluccius capensis) as the principal catch and local firms are interested in developing a United States market for them.

The crayfish (spiny lobster), third in volume of fish caught in South African waters, is perhaps of most importance to the United States, which has been the major market (over 90 percent of South African crayfish since 1941). Under conservation regulations there is a quota of 6,000,000 pounds of crayfish tails which may be canned or frozen annually for export. The Fisheries Development Corporation estimates that the tail of the South African crayfish is on the average 1/3 of the total weight, which means that the 6,000,000-pound export quota involves a total catch for export of 18,000,000 pounds of crayfish. A further 2,000,000 pounds of crayfish caught for the local market thus brings the gross annual catch in South African waters to 20,000,000 pounds, the remaining 5,000,000 pounds being caught off the shores of South-West Africa.

The South-West African crayfish grounds are being developed rapidly. Four canneries at Luderitz today produce 100,000 24-tonsof offal, valued at \$100,000. A fifth cannery with a cold-storage plant and a fish-oil plant are being erected.

There are currently established by official edict six sanctuaries where the catch of crayfish is prevented--four in the Cape Peninsula area, one at Saldanha Bay, and another at St. Helena Bay. There are also conservation regulations forbidding the taking of soft-shell specimens, of females "in berry," and of crayfish with a carapace-length of less than 3½ inches. The growth of the crayfish industry may be seen in the increase in annual catch from 15,000,000 pounds in 1932 to 25,000,000 pounds in 1947 and the growth of exports of canned and frozen tails from 3,566,000 pounds in 1924 to 6,000,000 pounds in 1947.



November 1951

REFRIGERATION: Freezing Fish at Sea, Defrosting, Filleting, and Refreezing the Fillets: The sixth test cruise of the research trawler Delaware was completed. At no time during any of the six cruises had the refrigeration systems operated entirely satisfactory. During Cruise No. 5, approximately 6,000 pounds of fish were frozen in the brine freezer; about 3,000 pounds of fish were iced for comparative studies. On Cruise No. 6, in the course of operating the refrigeration machinery, the heat-exchanger tubes in the brine cooler were ruptured for the second time.

Because of a mandatory reduction in funds for personnel, the crew of the Delaware will be released on December 10 for a period of three months and the vessel will be laid up for the winter. During this time, the refrigeration equipment will be repaired. The brine-freezing and frozen-storage systems will be redesigned and improved based upon the experience and observations made during the summer and fall operations. It is expected that the next vessel operations at sea will begin about March 1952.

Laboratory studies continue on evaluation of trimethylamine as a freshness index for fish, salt penetration in fish frozen in refrigerated brine, evaluation of quality of fish frozen at sea as compared to iced fish, and investigation of the possible use of other freezing mixtures or solutions. (Boston)

* * * * *

BYPRODUCTS: Vitamin Content and Nutritive Value of Fishery Byproducts: Fish meal has recently suffered considerably because of inadequate information concerning its chemical composition. Competing products, especially those being produced by pharmaceutical manufacturing companies are carefully standardized and can be advertised to contain definite amounts of nutritive components. This project has as its aim to determine the range of concentration of certain vitamins, especially vitamin B₁₂ and riboflavin, in fish meal from different sources and to determine the possible presence of unknown vitamins and other growth substances which may be present in fish meal.

* * * * *

Samples of (pilchard) material representing the various stages in the manufacture of sardine meal by the flame-drying procedure were obtained at a reduction plant in California. Analyses for riboflavin and niacin were completed on these samples and the data are shown in table 1. Each value reported in the table is an average of five individual samples: each sample was assayed a minimum of five separate times.

Also, samples of sardine and menhaden fish before and after processing by the Viobin process were analyzed for riboflavin, niacin, and vitamin B₁₂. These results are shown in table 2.

Table 1 - Riboflavin and Niacin Content at Different Stages of Sardine (Pilchard) Meal Manufacture

Sample	Vitamin content 1/ (moisture-and-oil-free basis)	
	Riboflavin	Niacin
	Micrograms Per Gram	Micrograms Per Gram
Raw fish.....	9.5	218
Fish from cooker.....	6.65	197
Press cake.....	4.7	90
Foots from foots press...	6.4	114
Stickwater (uncondensed).	23.7	691
Meal (flame dried).....	4.4	66

1/ EACH VALUE IS AN AVERAGE OF AT LEAST FIVE SEPARATE SAMPLES.

With respect to the sardine meal processed in California (table 1), there is little or no loss of riboflavin due to flame-drying the meal. However, there is a definite loss of niacin during the drying process (90 micrograms niacin per gram in the press cake as compared to 66 micrograms per gram in the meal on the moisture-and-oil-free basis). A large part of both the niacin and riboflavin is present in the stickwater rather than the meal.

There was a loss of niacin in the Viobin-processed samples as shown in table 2 (318 micrograms niacin per gram in the raw product as compared to 193 micrograms per gram in the meal on the moisture-and-oil-free basis).

Table 2 - Riboflavin, Niacin, and Vitamin B₁₂ Content of Sardine and Menhaden Before and After Viobin Processing

Species	Sample	Vitamin content (oil-and-moisture-free basis)		
		Riboflavin	Niacin	Vitamin B ₁₂
		Micrograms Per Gram	Micrograms Per Gram	Micrograms Per Gram
Pilchard	(Raw fish	18.8	318	0.92
	(Processed material ...	19.0	193	0.75
Menhaden	(Raw fish	13.4	198	0.57
	(Processed material ...	15.0	107	0.46

(Seattle)

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COMPOSITION: Composition and Cold-Storage Life of Fresh-Water Fish: Very little information is available as to the chemical composition of fish of inland fresh waters and no published information whatever is available concerning the cold-storage life of fresh-water fish. The project has as its purpose the determination of the chemical composition and cold-storage life of such fish. The data on the composition of the first six samples of yellow pike, sheepshead, and blue pike are presented in the following table:

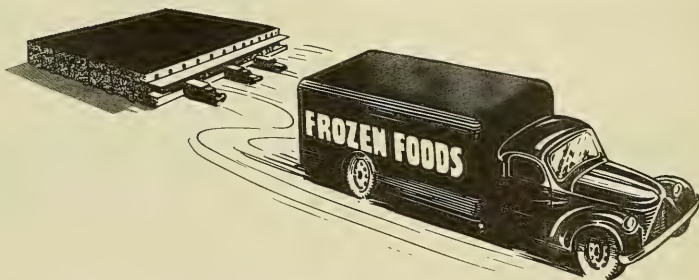
Composition of First Six Samples Analyzed for Each of Three Species of Lake Erie Fish

Fish	Sample No.	Length	Weight	Fillet Yield	Moisture	Fat	Protein	Ash
		Centimeters	Grams	Percent	Percent	Percent	Percent	Percent
Yellow Pike (<u>Stizostedion</u> <u>vitreum</u> <u>vitreum</u>)	1	38	480	52	79.5	1.17	19.0	1.15
	2	38	540	57	79.0	1.10	19.4	1.20
	3	58	2165	53	79.5	3.02	18.8	1.20
	4	34	360	57	79.2	1.33	19.7	1.16
	5	40	535	56	79.9	1.39	19.0	1.12
	6	41	595	59	79.8	2.02	19.4	1.15
Sheepshead (<u>Aplodinotus</u> <u>grunniens</u>)	1	25	230	37.8	78.0	3.02	18.6	1.11
	2	27	255	37.2	77.8	3.78	19.0	1.05
	3	27.5	235	40.4	77.7	4.26	17.9	1.08
	4	26.5	215	34.9	76.1	6.00	18.5	1.10
	5	27	255	37.2	78.9	2.76	18.1	1.04
	6	29	315	38.1	75.1	7.31	18.4	1.08
Blue Pike (<u>Stizostedion</u> <u>vitreum</u> <u>glaucum</u>)	1	27.5	155	41.9	81.1	0.80	18.3	1.10
	2	26.5	145	41.3	80.1	0.87	19.1	1.29
	3	28	185	44.3	79.4	0.78	18.4	1.23
	4	28	170	42.4	80.3	0.82	18.8	1.24
	5	29	222	45.0	79.2	0.95	19.4	1.20
	6	33	280	45.4	79.7	0.89	18.9	1.15

(Seattle)



REFRIGERATED LOCKER STORAGE OF FISH AND SHELLFISH



The locker operator will find that, in introducing fishery products to his patrons, commercially-frozen packaged fish offer certain advantages. These commodities are more convenient to handle and require less care. It may, however, be more profitable to purchase fresh fish, during the seasons of abundance and prepare, package, and freeze them for sale to locker patrons for storage.



TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

During September 1951, a total of 53 vessels of 5 net tons and over received their first documents as fishing craft--16 less than in September 1950, according to the Bureau of Customs. California and Texas led with 7 vessels each, followed by North Carolina and the West Coast of Florida with 5 vessels each.

A total of 652 vessels were documented for the first time as fishing vessels during the first nine months of 1951, compared with 671 vessels for the same period during 1950.

Vessels Obtaining Their First Documents as Fishing Craft, September 1951					
Section	September		Nine mos. ending with Sept.		Total
	1951	1950	1951	1950	1950
	Number	Number	Number	Number	Number
New England.....	4	6	30	28	36
Middle Atlantic.....	-	3	28	39	45
Chesapeake Bay.....	3	3	22	63	81
South Atlantic.....	12	17	88	117	153
Gulf.....	14	21	143	135	167
Pacific.....	11	13	258	200	231
Great Lakes.....	5	1	16	10	12
Alaska.....	4	5	64	76	83
Hawaii.....	-	-	3	3	4
Total.....	53	69	652	671	812

NOTE: VESSELS HAVE BEEN ASSIGNED TO THE VARIOUS SECTIONS ON THE BASIS OF THEIR HOME PORT.



Federal Purchases of Fishery Products

FRESH AND FROZEN FISH PURCHASES BY DEPARTMENT OF THE ARMY, OCTOBER 1951: The considerable increase in the purchases of fresh and frozen fishery products by the Army Quartermaster Corps during the past few months reflected the increased food requirements of the Armed Services and their difficulty in obtaining other types of protein foods. October 1951 purchases for the U. S. Army, Navy, Marine Corps, and Air Force totaled 3,260,165 pounds (valued at \$1,545,701)—the second highest purchase for any one month since January 1948. The highest monthly purchase was in September this year—4,315,242 pounds (valued at \$1,758,296).

Purchases this October were higher than in October 1950 by 25.7 percent in quantity and 47.1 percent in value (see table).

Purchases of Fresh and Frozen Fishery Products by Department of the Army (October and the First Ten Months, 1951-50)							
Q U A N T I T Y				V A L U E			
October		January-October		October		January-October	
1951	1950	1951	1950	1951	1950	1951	1950
lbs.	lbs.	lbs.	lbs.	\$	\$	\$	\$
3,260,165	2,593,246	27,845,614	14,403,682	1,545,701	1,050,634	11,639,081	5,947,956

For the first ten months this year total purchases were above the corresponding period a year ago by 93.3 percent in quantity and 95.7 percent in value. If the present rate of purchases by the Quartermaster Corps continues for November and December, total purchases for 1951 will be almost double those for any year since 1948.



Fishery Methods and Equipment Specialist Examination

The Civil Service Commission on November 6 announced unassembled examinations for the position of Fishery Methods and Equipment Specialist, grades GS-5 through GS-13. Entrance salaries range from \$3,100 to \$7,600 per year (not including the recent Federal pay raise). No closing date has been specified.

The Fish and Wildlife Service of the Department of the Interior requires Fishery Methods and Equipment Specialists for exploratory fishing and for improving methods of fishery operations. Experienced commercial fishermen or men trained in applicable branches of fishery biology, technology, or engineering should find these positions attractive. The positions require sea duty in varying localities, chiefly in the Atlantic and Pacific Oceans. These specialists advise on, direct, examine, analyze, or perform work in connection with: (1) the appraisal of fishery resources; (2) methods and techniques for locating new fishing areas and taking fish; (3) designing, fabricating, installing, and testing improved equipment for taking fish and for handling, storing, preserving, processing, and transporting fish at sea and on shore.

Except for the substitution of education for experience as provided for in the announcement, applicants must have had experience of the length shown and of the kind described, commensurate in quality with the grade level for which application is made. The amount of experience ranges from 3 years of general, plus 1 year of specialized experience for the GS-5, to 3 years of general, plus 4 years of specialized for the GS-13 grade.

Successful completion of course of study in schools above high-school level, with major study in the fields of fishery technology, fishery engineering, or fishery biology, may be substituted on the basis of 1 year of education for 1 year of the required general or specialized experience; other courses, such as biological sciences, engineering, physical sciences, general food technology specifically including courses involving fishery products, may be substituted on the basis of one year of education for 6 months of the required general or

specialized experience up to a maximum of 2 years. In addition, graduate study in fishery technology, fishery engineering, or fishery biology successfully completed at an accredited school, may be substituted for the required experience on the basis of 1 year of graduate study for 1 year of specialized experience.

Types of general experience considered qualifying include: mate or engineer on a fishing vessel, net-loft supervisor, commercial fisherman, licensed deck officer, and similar or closely related types of experience.

Types of specialized experience considered qualifying include: port captain or fleet supervisor of a fishing fleet, master of fishing vessels over 25 net tons, navigator of fishing vessels operating offshore, designer of fishing vessels and equipment, cannery superintendent, including supervision of fish production, technical employment in conducting fishery exploration or in developing fishery gear equipment, and other closely related types of experience.

Competitors will not be required to report for a written test, but will be rated on the extent and quality of their experience and training relevant to the duties of the positions.

To apply for this examination, file Card Form 5001-AEC, Form 57, and Standard Form 15. These forms, as well as a copy of Announcement 310, giving the particulars of this examination, are obtainable from the U. S. Civil Service Commission, Washington 25, D. C., or from any of its Regional Offices, or from any first- or second-class post office. Applications are to be sent to the Executive Secretary, Committee of Expert Examiners, Fish and Wildlife Service, Washington 25, D. C. Applications will be accepted until further notice.

Freezing-Fish-At-Sea Technological Studies

MECHANICAL DIFFICULTIES CURTAIL "DELAWARE'S" CRUISE NO. 6: It was not possible for the Delaware to freeze fish at sea while on Cruise No. 6 because of the mechanical difficulties which developed with the heat exchanger that refrigerates the brine in which the fish are frozen. The vessel left port on November 8 for a six-day cruise, but it was forced to return to Boston on November 9. This vessel is being used by the Service's Branch of Commercial Fisheries in its freezing-fish-at-sea studies.

The purpose of the cruise was to continue full-scale experimental freezing studies at sea, and test the freezing apparatus and refrigeration machinery under rated capacity loads. In addition, experiments on containers in which fish will be frozen were to be carried out.



Middle and South Atlantic Little Tuna Explorations

SOME LITTLE TUNA SEINED BY "ATLANTIC EXPLORER" (Cruise No. 4): Two sets made by the Atlantic Explorer during Cruise No. 4 on rather poor surface showings of little tuna yielded 35 and 40 fish, respectively, or a total of 75 fish with an average weight of approximately 13 pounds each. These explorations for little tuna in the Middle and South Atlantic area are being conducted on a cooperative arrangement between the U. S. Fish and Wildlife Service and two Beaufort, South Carolina, fishery firms.



COMPLETING BRAILING OF A SET OF LITTLE TUNA (EUTHYNNUS ALLEUTICUS) MADE BY THE ATLANTIC EXPLORER. NOTE LITTLE TUNA AT BOTTOM OF SKIFF.

The Atlantic Explorer started exploratory fishing operations out of the Morehead City, North Carolina, area on October 12 and temporarily terminated operations in this area on November 1. The weather throughout most of this period was unsuitable for purse-seining except in the lee of land, and even with offshore winds the search was necessarily confined to an area within ten miles of shore from Cape Lookout to Bogue Inlet, North Carolina.

Small spots of fish showing from one to ten individual fish could be seen with a degree of frequency nearly every day from daybreak until about 2 p.m. These showings, however, were usually observed some distance from the boat and generally were not persistent enough to fix the position of a school for setting the seine. One set was made on October 12 in the hope that the school would remain near the last observed position but no tuna were captured. It was estimated that at least ten tons of small fish, presumed to be feed for the tuna, were in the seine when pursing was completed.

The gonads of the little tuna captured by the two successful sets were small and firm, indicating that they had spawned some time ago and that a considerable period can be expected to elapse before similar fish would again be ripe.

Party boat fishermen, trolling deep, had consistently good catches of tuna varying from 5 to 50 fish per day, but it was their impression that (1) the tuna were scattered rather than in concentrated schools, and (2) that there are less tuna in the area than during a similar period last year.

This cruise terminates this year's little tuna survey as the cooperating companies considered further operations inadvisable due to unfavorable weather conditions prevailing in the coastal waters of the Middle Atlantic States. The M/V Atlantic Explorer used for these explorations was a 104-foot boat which had been converted to operate a Pacific Coast-type purse seine.



Pacific Oceanic Fishery Investigations

"HUGH M. SMITH" STUDIES HYDROGRAPHY OF HAWAIIAN WATERS (Cruise XII): The primary mission of the Hugh M. Smith's Cruise XII was to: (1) Obtain information on the hydrography, chemical nutrients, and zooplankton of Hawaiian waters, and correlate these with the distribution of tunas. In particular, the cruise was designed to note whether or not significant changes occurred in the hydrography of the region between July and October, and (2) to collect tuna eggs and larvae by surface tows at each station, as well as (3) to estimate the abundance of tunas by daylight observations of birds and fish schools.

This vessel of the Service's Pacific Oceanic Fishery Investigations left Pearl Harbor October 23, 1951, and returned November 3, 1951.

Temperature and current observations were made by means of Nansen bottle casts and the GEK. Local currents appear to be both changeable and complicated. Two well-developed counterclockwise eddies were observed, one centered about 70 miles SW. of Oahu, the other about 90 miles SW. of Hawaii. Near islands, currents appeared variable in strength and direction.

Surface tows were made at 30 stations for eggs and larvae. Some 14 eggs were taken, 6 of which have been tentatively identified as tuna eggs. No fish were raised to the point at which they could be identified.

Continuous daylight observations of birds and fish schools were made. Of the 22 schools sighted, 8 were identified as skipjack, the remainder being unidentified.

The Hugh M. Smith has been scheduled for use in gear-testing and gear-standardization experiments until November 25, at which time the vessel will go on drydock for annual overhaul.



California

SARDINE 1951 SPAWNING SET OFF SOUTHERN CALIFORNIA ONLY MODERATELY SUCCESSFUL: The 1951 spawning set of sardines off the southern California coast and northern Mexico "is not more than moderately successful," according to a news release of November 7 of the California Department of Fish and Game.

The observation was made following the latest cruise of the Yellowfin, 100-foot research vessel operated by the California Bureau of Marine Fisheries. Although adult and juvenile sardines were caught at numerous points, they were "nowhere in striking abundance," the report stated.



Wholesale and Retail Prices

WHOLESALE PRICES, OCTOBER 1951: Although edible fishery products prices in October continued substantially lower than in the same month of 1950, lighter production in all fisheries was responsible for an increase in prices from September to October this year. The edible fish and shellfish (fresh, frozen, and, canned) wholesale index for October was 106.4 percent of the 1947 average (see table 1)--1.4 percent higher than in September, but 4.0 percent below October 1950, the Bureau of Labor Statistics of the Department of Labor reports.

Drawn, dressed, or whole finfish prices in October were 7.3 percent below the corresponding month a year ago, but 2.2 percent above September this year. Boston haddock landings this October were considerably below those of a year earlier and prices of fresh drawn haddock rose 8.9 percent from September to October. During the same period, halibut rose 1.5 percent but salmon remained steady at September prices. However, all of these items were still priced substantially below October 1950: fresh drawn haddock by 10.4 percent, halibut by 18.3 percent, and king salmon by 4.9 percent. Although lower prices were quoted in October for most freshwater fish (except whitefish at Chicago), all of these fish were substantially

Table 1 - Wholesale Average Prices and Indexes of Fish and Shellfish, October 1951, with Comparative Data									
GROUP, SUBGROUP, AND ITEM SPECIFICATION			POINT OF PRICING UNIT		AVERAGE PRICES (\$)			INDEXES (1947 = 100)	
					Oct. 1951	Sept. 1951	Oct. 1950	Oct. 1951	Sept. 1951
ALL FISH AND SHELLFISH (Fresh, Frozen, and Canned)								106.4	104.9
Fresh and Frozen Fishery Products:								106.2	104.8
Drawn, Dressed, or Whole Finfish:								116.1	113.6
Haddock, large, offshore, drawn, fresh	Boston	lb.	.11	.10	.12	115.9	106.4	129.4	
Halibut, Western, 20/80 lbs., dressed, fresh or frozen	New York City	"	.33	.32	.40	94.8	93.4	116.1	
Salmon, king, lge. & med., dressed, fresh or frozen	" " "	"	.53	.53	.56	130.1	130.1	136.8	
Whitefish, mostly Lake Superior, drawn (dressed), fresh	Chicago	"	.64	.63	.45	184.9	182.7	130.0	
Whitefish, mostly Lake Erie pound net, round, fresh	New York City	"	.66	.75	.53	149.2	170.1	120.5	
Lake trout, domestic, mostly No. 1, drawn (dressed), fresh	Chicago	"	.51	.54	.43	111.4	118.6	95.1	
Yellow pike, mostly Michigan (Lakes Michigan & Huron), round, fresh	New York City	"	.49	.58	.40	115.2	134.6	93.9	
Processed, Fresh (Fish and Shellfish):						93.8	94.0	89.3	
Fillet, haddock, small, skins on, 20-lb. tins	Boston	lb.	.36	.28	.27	127.7	102.0	95.4	
Shrimp, lge. (26-30 count), headless, fresh or frozen	New York City	"	.49	.52	.54	71.1	75.6	77.2	
Oysters, shucked, standards	Norfolk area	gal.	5.00	5.00	4.40	123.1	123.1	108.3	
Processed, Frozen (Fish and Shellfish):						102.6	101.2	102.6	
Fillet: Flounder (yellowtail), skinless, 10-lb. bxs.	Boston	lb.	.42	.42	.35	135.6	135.6	113.0	
Haddock, small, 10-lb. cello-pack	"	"	.26	.24	.24	118.1	108.1	109.7	
Ocean perch (rosefish), 10-lb. cello-pack	Gloucester	"	.26	.24	.26	128.5	120.3	129.8	
Shrimp, lge. (26-30 count), 5-lb. bxs.	Chicago	"	.53	.57	.59	77.2	81.7	84.6	
Canned Fishery Products:						106.8	106.1	113.2	
Salmon, pink, No. 1 tall (16 oz.), 48 cans per case	Seattle	case	20.68	20.68	23.64	134.9	134.9	154.1	
Tuna, light meat, solid pack, No. 3 (7 oz.), 48 cans per case	Los Angeles	"	12.75	12.75	14.75	82.9	82.9	96.0	
Sardines (pilchard), California tomato pack, No. 1 oval (15 oz.), 48 cans per case	"	"	6.75	6.75	6.25	75.5	75.5	69.9	
Sardines, Maine, keylens oil, No. 3 (3 1/2 oz.), 100 cans per case	New York City	"	9.83	8.68	5.75	96.4	85.1	56.4	

higher-priced than in October 1950 because production was considerably lighter this year and also because of the Hebraic holidays celebrated during the month.

Processed fresh fish and shellfish prices in October were 0.2 percent lower than in the previous month, but 5.0 percent higher than in October 1950. Higher prices for fresh haddock fillets were offset by lower prices for fresh headless shrimp. Because of lighter production and a shortage of frozen haddock fillets, fresh haddock fillet prices jumped 25.2 percent from September to October this year. On the other hand, fresh headless shrimp prices continued to drop (6.0 percent) because of the usual seasonal increase in production, while shucked oysters remained steady at September levels. Compared with October 1950, fresh headless shrimps sold 7.9 percent lower, but fresh haddock fillets were priced 33.9 percent higher.

From September to October frozen headless shrimp prices continued to fall (5.5 percent), but this decline was more than offset by higher prices for frozen haddock fillets (9.3 percent) and frozen ocean perch fillets (6.8 percent). A labor dispute between management and one section of the Longshoremen's Union on the East Coast held up the normal flow of frozen fishery products imports from countries other than Canada. Foreign frozen fillets were particularly short during the month and the demand for domestic frozen fillets was quite active. Flounder fillets remained unchanged at September prices. Compared with October 1950, frozen headless shrimp sold 8.7 percent lower and frozen ocean perch (rosefish) fillets 1.0 percent lower, but frozen haddock fillets were priced 7.7 percent higher and frozen flounder fillets 20.0 percent higher. The index for processed frozen fish and shellfish for October was 1.4 percent higher than in September, but the same as in October 1950.

An increase of 13.3 percent in canned Maine sardine prices accounted for the rise of 1.6 percent from September to October of the canned fishery products index. An increase of 15 percent over the average price which would be permissible under CPR 22 was allowed by OPS on October 17 when it issued a specific dollars-and-cents ceiling price for sales by canners of Maine sardines (CPR 85). A ceiling price of \$10.50 for a case of 100 standard $\frac{1}{4}$'s keyless cans of Maine sardines packed in oil was set by the regulation which was issued by OPS to take account of the low volume of fish available this year. Latest reports indicate that this year's pack is only 40 percent of last year's production of 3,844,164 cases. Although the California sardine pack to date is also considerably below last year's, prices for this product remained steady at September levels. Canned pink salmon and canned tuna prices also remained unchanged. Prices for canned pink salmon were 12.5 percent lower and those for canned tuna 13.6 percent lower than in October 1950, but canned California sardines and canned Maine sardines sold 8.0 percent and 70.9 percent higher, respectively.

RETAIL PRICES, OCTOBER 1951: Although urban families of moderate incomes paid slightly higher prices for all foods between mid-September and mid-October, fishery products prices at retail showed no change (see table 2). The adjusted retail price index for all fresh, frozen, and canned fish and shellfish in mid-October remained

Table 2 - Adjusted Retail Price Indexes for Foods and Fishery Products,
October 15, 1951, with Comparative Data

Item	Base	I N D E X		
		Oct. 15, 1951	Sept. 15, 1951	Oct. 15, 1950
All foods.....	1935-39 = 100	229.2	227.3	210.6
All fish and shellfish (fresh, frozen, and canned)	do	353.2	353.2	328.8
Fresh and frozen fish....	1938-39 = 100	294.7	290.1	277.1
Canned salmon: pink.....	do	489.1	503.1	446.9

at 353.2 percent of the 1935-39 average, but was still 8.8 percent higher than on October 15, 1950.

However, fresh and frozen fishery products prices at retail in mid-October this year were 1.6 percent higher than in mid-September and 6.4 percent above mid-October 1950.


To compensate for the increase in fresh and frozen fish and shellfish, canned pink salmon continued to decline. The retail index for canned pink salmon in mid-October was reported at 489.1 percent of the 1938-39 average—9.4 percent lower than during the same period a year earlier, but 2.8 percent lower than the previous month.



OYSTERS ARE GOOD THE YEAR-AROUND

The wide-spread notion that oysters are harmful to consumers when eaten during the "non-R" months is debunked by the Assistant Surgeon General of the U. S. Public Health Service in a statement issued on September 1, the opening date of the traditional oyster season. "Oysters are edible the year-around," the Assistant Surgeon General declares, "but they are fatter, more palatable and more plentiful on the market during those months that contain the letter 'R'. It is only coincidental that those months in which the oyster is most palatable happen to be the 'R' months."

The Assistant Surgeon General said the tradition that oysters must be eaten only in the "R" months may have originated somewhat as follows: In that species of oyster eaten in the Old World for centuries, fer-



tization of the seed from which the baby oysters grow takes place within the shell of the parent oyster. Shortly before the baby oysters are ejected by the parent to fend for themselves, they begin to develop a shell. If the Old World oyster is eaten at this stage of incubation, the large number of almost microscopic baby oysters, each developing a shell, impart a gritty quality to the meat. Because the reproductive period of all oysters is in the summer, early settlers of this country, cognizant of this but mindful of their Old World variety, avoided placing New World oysters on the menu until later in the year.

Even after our forefathers discovered that the North American east coast oyster fertilizes its eggs in the sea water outside the parent shell, oyster consumption in this country continued, for the most part, to be a winter activity. Partly responsible for this was the fact that only until recent years have refrigeration facilities been developed whereby oysters can be preserved in warm weather while being transported from the coastal growing areas.

Today, when perishable food products are transported thousands of miles by railroad and airplane, yet preserved by refrigeration, the greater portion of the country's shellfish consumers still cling to the old tradition.

The advent of quality frozen oysters available throughout the year, however, may change this custom.



International

NORTH SEA FISHING RESEARCH PLANNED BY INTERNATIONAL BOARD: Next year Great Britain, The Netherlands, and Germany will carry out joint hydrographic research into North Sea plaice fishing, according to an announcement made at The Hague on October 10. This was decided at the 39th annual meeting of the Permanent International Board for Maritime Research, held in Amsterdam from October 1-9.

The Board, comprising about one hundred representatives of all countries with fishing interests in the North Sea, studied reports which include some on overfishing, the Canadian Foreign Trade of November 10 points out. Statistics submitted by the member countries showed that the volume of sea fish, which had greatly increased during World War II, has declined to the prewar level, not only in the North Sea but also in other waters. The decline has been more rapid than after World War I. The communique added that special attention was paid to the effects of hydrographical conditions on fish. The Norwegians had collected data about temperature, salt content, and currents of water and were now able to forecast the arrival of cod in their coastal areas, their delegates reported to the meeting.

In Great Britain an investigation was being made of the connection between wind strength and direction in the spawning season and the survival of the young fry, which would soon make it possible to forecast what each brood year will yield for a fishery, the communique stated. The Norwegians had further gained a better insight into the migration of herring types from a study of the movement of herring schools to and from the coast with the aid of echo soundings.

FOOD AND AGRICULTURE ORGANIZATION

WORLD FISH PRODUCTION: The herring family, which makes up the largest proportion of fish caught in the sea, is being given a close run by fish caught in fresh and brackish waters, according to a study of world fish production by the Food and Agriculture Organization's Fisheries Division.



Of an estimated 25,000,000 tons of fish produced annually by the world's fisheries, herring and similar species make up 21 percent of the total, while fresh and brackish-water fish are a close second with 19 percent, the study reveals. Cod, hake, and similar species comprise 14 percent of the total, and crustaceans and mollusks 8 percent. Salmon, tuna, and flat fishes are represented by lesser percentages.

If the total annual world catch were divided among the world population, the FAO study estimates that the availability of fish per person would be about 27 pounds a year. But this figure does not indicate how much is actually consumed.

because a considerable part of the total weight is cut away during cleaning, and a certain quantity is converted into oil and meal which is not for human consumption. Actually only about 20 percent of the world catch reaches the table.

Asia, excluding Russia, is the leading fish-producing region of the world, yielding 48 percent of the total. Europe follows with 24 percent, and North America and South America combined, with 17 percent.

The outlook for increased fish production appears to be promising, for the FAO study reports that many countries are adding, or planning to add, mechanized craft to the fishing fleets to fish in areas farther from port and save on travel time. Moreover, the report adds, improvements in fishing gear and equipment are being made in many underdeveloped as well as developed countries.

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FISHERIES STATISTICS INTERNATIONAL MEETING: An International Meeting on Fisheries Statistics had been scheduled by FAO in Rome, October 29-November 3, 1951. The FAO Conference has consistently recognized fisheries statistics as a prerequisite for policy making in the fields of fisheries production and trade. The task of compiling, collating, and publishing fisheries statistics was among the first projects undertaken by the FAO Fisheries Division.

According to FAO, the stage has now been reached where further progress will be impeded unless representatives of member countries discover the means of obtaining more comparable and up-to-date national statistics.

The meeting was to consider the need for statistics from several angles--trade, research, government regulations--as well as the most effective ways in which to meet the need.

Included in the agenda was a general statement characterizing fisheries statistics now available; the present and future role of fisheries statistics as experienced by individual countries; and problems involved in statistics on fishing equipment and personnel, fish catches and landings, domestic and external trade in fisheries products, processing industries, prices, fish consumption, investment, cost and efficiency; possibilities for measurement of contribution to national income; problems related to conversion factors and terminology; and the use of estimates and sample surveys in fisheries matters.

The meeting was not held as scheduled due to a delay in receiving notices of participation from interested nations. Plans are being made, however, to take up the same agenda in regional meetings.

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GENERAL FISHERIES COUNCIL FOR THE MEDITERRANEAN ACCEPTED BY EGYPT: The Government of Egypt has accepted the Agreement drafted in Rome, Italy, on September 24, 1949, for the formation of a General Fisheries Council for the Mediterranean. Notification was received by the Food and Agriculture Organization on February 19, 1951.

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THIRD MEETING OF THE INDO-PACIFIC FISHERIES COUNCIL: The Indo-Pacific Fisheries Council (IPFC) held the third of its regular annual meetings at Madras, February 1-16, 1951, according to the May/June 1951 FAO Fisheries Bulletin. This Council, established under the auspices of FAO and financially and otherwise as-

sisted by FAO, is an advisory and consultative body consisting of sixteen member nations interested in the development of the fisheries in the Indo-Pacific region.

At the Madras meeting, the Council dealt with an agenda which was composed of several essential procedural items, and which surveyed the whole field of fisheries work in this region. Technical papers on almost every aspect of the fisheries were presented.

In certain fields, the Council proposed the continuation of a program of survey to be conducted by its Subcommittee of Fisheries Phenomena. In the field of gear survey, the Council was presented with a logical system of classification of fishing gear and methods, constructed on sound taxonomic principles. A group of workers were appointed to prepare a catalog of fishing gears and methods, employing whatever system of classification the workers might regard as best. Also, plans for catalogs of fishing craft and of processing methods have also been developed.

Primarily the Council has drawn the attention of the member governments to the fact that, in order to enable it to discharge its function of co-ordinating programs of research and development, it must be kept informed of these programs, and in several fields it has specifically asked member governments to provide the information. Among these are planktology, algology, and general fisheries biology.

A United States delegate and an assistant were present at the meeting.

The next meeting of the Council is scheduled to be held in Manila, October 1952, at the invitation of the Government of the Philippines Republic.



Canada

LOBSTER LENGTH LIMITS: Over the past year, the Canadian Department of Fisheries has been following very closely the developments resulting from the passage by the State of Massachusetts of legislation increasing from 3-1/8 inches to 3-3/16 inches the minimum size at which lobsters might be caught or found in anyone's possession in that State.



Close studies by scientists of the Fisheries Research Board of Canada indicated that a certain amount of extra protection would be provided by the increased length, the October 1951 Trade News of the Canadian Department of Fisheries reports; also, that after the first year the total poundage caught should be about the same or slightly larger than at present.

It was evident, however, that because a large part of the Maritime lobster production is sold in Massachusetts, a serious marketing problem would result. Markets, other than Massachusetts, would have to be found for lobster 3-1/8 inches and 3-3/16 inches.

The Canadian Department is recommending regulations (to be effective as soon as possible) to raise the present minimum length, to 3-3/16 inches in those areas where the present minimum length is 3-1/8 inches.

Developments will be closely watched by the Canadian Department throughout the ensuing year to determine whether conditions will warrant a further increase to bring the minimum length to 3-1/4 inches as proposed by the State of Massachusetts, effective December 1, 1952.

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RECORD SWORDFISH SEASON REPORTED BY NOVA SCOTIA: Nova Scotia fishermen reported a record 1951 swordfish season in offshore waters, while inshore catches were the leanest in years. Total money earned by the fishermen topped the million-dollar (Canadian) mark as compared with last year's C\$663,354.

Swordfish followed the herring and and mackerel seaward, and the small inshore craft were left with catches of only one or two of the giants each trip, if any at all. As a result of the seaward movement of the swordfish, the offshore craft enjoyed an exceedingly heavy harvest. Records show particularly good catches in the Sable Island area, with some five-day trips netting a catch of over 90 fish per craft, states an October 31 American consular report from Halifax.



Tuna, which have developed in recent years as another main source of summer income for many fishermen, did not come inshore either and a poor catch was reported.

NOVA SCOTIA EXPERIENCES ICE SHORTAGE: Nova Scotia experienced an ice shortage that seriously crippled the fishing and fish-processing industry this summer. A series of ice-making plants have been, or are being opened, which will insure self-sufficiency next year, regardless of what the winter weather may bring. Ice for use during the present summer months has had to be hauled from New Brunswick and other distant points, and there have even been imports of crushed ice from Gloucester, Massachusetts.

STEEL TRAWLER FLEET FOR NOVA SCOTIAN FISHERY FIRM: The first steel trawler ever built especially for the Canadian fishing industry was scheduled to arrive in Halifax at the end of October to join the fishing fleet operated by a large fishery firm. The ship, the Cape Beaver, will be the first of five built along similar lines which the company will receive over the next seven months. The five-trawler addition, it is said, will give the firm the most modern and up-to-date fishing facilities in the North Atlantic, as well as the largest fleet. The approximate cost of these vessels, delivered at Halifax, will be over C\$300,000. The fleet is being built in England, and it is expected that they will be based at Halifax and Lunenburg.

The trawler Cape Beaver is 152 $\frac{1}{2}$ feet over-all, with a breadth of 26 $\frac{1}{2}$ feet and a depth of 13 $\frac{3}{4}$ feet, a gross tonnage of 396 tons, and a fish hold capacity of 8,500 cubic feet. This will permit her to carry approximately 340,000 pounds of iced fish. The vessel is powered with oil-fired super-heated steam, including ice-cutting lances on deck for winter operations. The new trawlers are designed to operate with a crew of 19 men.



German Federal Republic

FISH MEAL PRODUCTION UP IN 1951: West German fish-meal factories expect to produce this year 53,000 to 55,000 metric tons against 46,000 tons in 1950, points out the November 10 issue of The Fishing News, a British fishery periodical. In addition, at the time of this report, about 20,700 metric tons of fish meal were imported by Western Germany.

As the supply of fish meal, particularly of cod meal, has tightened considerably of late, 3,000 tons of cod and fish meal stored during the summer have been released for distribution.

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DENMARK PROPOSES GERMANY ENTER NORTH SEA FISHING CONVENTION: A proposal that Germany be invited to accede to the North Sea Fishing Convention was made by the Danish Minister of Fishing during a recent visit to Kiel, reports the American Consulate at Hamburg in its November 8 dispatch. The Convention was concluded at London in 1946 but is not yet effective because it has not been ratified by Spain and the Netherlands.



Greenland

NEW FISH PLANTS: A new fish freezing and cold-storage plant is being built in Sukkertoppen, Greenland, according to an October 20 American consular dispatch from Godthaab. Plans call for the production of frozen halibut, cod, and catfish fillets. A German-built fillet machine for the processing of cod is already in operation. Halibut, which previously could not be prepared for export and therefore were not profitable to catch, are now being purchased for freezing and export to the United States.

The most significant development in Egedesminde this year has been the building of a new freezing and fish-cleaning plant, which is now in operation. Two large, wooden sheds have been provided: one for the cleaning, salting, and packaging of fish, and the other for freezing and cold storage. A roller conveyor runs between the two buildings to a small dock. The cleaning house is divided into sections which provide storage for salt and packaging materials, and work areas for fish preparation. A large contact freezer is situated in the center of the cold-storage shed, which also has space for 500 metric tons of frozen fish. The plant produces frozen halibut, cod, and catfish fillets, and salt cod. A maximum of 10 Greenlanders are employed in the operations.



Iceland

HALIBUT STEAKS BEING PACKED FOR SALE IN U. S.: Icelandic quick-frozen halibut is now being packed in steaks for sale in the United States through an American sales agent, an October 30 American consular dispatch from Reykjavik points out. This is a two-fold innovation in the marketing of Icelandic fish in the U. S.: it is the first time that halibut is being shipped in the form of steaks, and it is the first time that Icelandic fish is being marketed through an American sales agent.

The potentialities of the sale of Icelandic halibut in the U. S. were neglected until 1950. Early in 1950, development of the halibut fishery for the U. S. market was recommended by an ECA-sponsored survey of the Icelandic fishing industry.

During the first nine months of 1951, the total Icelandic halibut catch (gutted weight) was 1,365 metric tons, against 603 tons for the same period of 1950. Much of the halibut catch was frozen whole, in accordance with the survey's recommendation. However, local producers were discouraged by the low prices prevailing in the U. S. for this product, and most of the year's production remained unsold through the summer.

A private Icelandic fish producer and broker found that the halibut would sell much more easily in the U. S. if cut and shipped in the form of steaks. He thereupon concluded a contract with an American selling agent in New York, and is now packing halibut steaks for shipment. Although not a member of the Icelandic Freezing Plants Corporation (FPC), an organization controlling the great bulk of Iceland's quick-frozen fish industry, the Icelandic broker has obtained its approval for packing and marketing halibut held by its member plants. This is in itself a radical development, since heretofore the FPC has adamantly refused to market fish in the U. S. except through its New York subsidiary. The Icelandic broker is expected to pack and ship 500-600 metric tons of halibut steaks.

The halibut is being cut into steaks which range from 8 to 14 ounces each in weight. Each steak is wrapped in an individual, moisture-proof, cellophane wrapper. They are then packed in 5-pound paper boxes which are packed in cardboard shipping cases, 10 boxes to a case. The fish is being sold under a trade name.

Virtually all Icelandic frozen fish sold thus far in the U. S. has been marketed by New York subsidiaries of the Icelandic producers. Production of the Icelandic FPC, which controls the bulk of Iceland's output, has been sold through the firm's New York office. Most remaining Icelandic production is controlled by the Federation of Iceland Cooperative Societies (FIS), which has marketed in the U. S. through its New York branch office. These New York offices have received Icelandic frozen fish on consignment, for subsequent sale in the U. S. Since the fish has not been sold when it left Iceland, individual local producers have not been able to count on a definite price for their products. Under this system, final payment by the FPC and the FIS is made to their member plants after final sale of the fish in the U. S., which is sometimes a number of months after the fish has been shipped. Changes in marketing methods, to improve over-all sales as well as payment methods, have been frequently discussed in Iceland. The ECA-sponsored survey recommended that American sales offices of Icelandic producers be staffed by Americans with long training and experience in the food and fishing industries. These offices are now managed by Icelanders. The sale of its fish under American brand names through American agents has been opposed by the FPC, and also by the FIS, as inimical to the long-range development of Icelandic fish sales, since it might obscure the high quality of the Icelandic product. Member plants of both the FPC and the FIS are obliged to market their production through the central offices of the two organizations except by special permission.



Japan

STRONGER CONTROL OVER FISHING BY JAPANESE PROPOSED: New regulations to strengthen Government supervision and control over indiscriminate fishing by Japanese fishing firms were proposed by the Fisheries Agency of the Japanese Ministry of Agriculture and Forestry. These proposed regulations are intended to enhance the international reputation of the Japanese fishing industry through co-operation with the international policy of protecting natural resources, an October 24 American consular dispatch from Tokyo reports.

The new regulations would provide for a patrol section in the Fisheries Agency as well as in the major prefectural governments. A liaison council would be organized between the central Fisheries Agency and the Maritime Safety Bureau. Stationed in four major bays in Japan to patrol coastal fishing would be 15 patrol speed boats, and about 10 larger boats would be constructed to patrol offshore fishing fields.

The Ministry decided also to present a bill for the partial amendment of the present Fisheries Law to the extra session of the Japanese Diet that was convened in October. The bill calls for a reduction in the number of boats in the coastal fishing fleet and requires prefectural government permission prior to construction of new fishing boats.

JAPANESE GOVERNMENT



Mexico

SHRIMP FISHING IN GULF OF CALIFORNIA IN FULL SWING: Commercial fishing in the Gulf of California got into full swing during October and the catch of shrimp and fish has been excellent so far, a November 6 American Consular dispatch from Mexicali points out. A good season is looked for in the northern part of the Gulf and numerous fishing boats from the Guaymas (Sonora) area are basing on San Felipe, Baja California. At present, about 150 commercial craft are working out of the port, compared with some 80 boats last season.

Most of the shrimp is destined for the U. S. market, and packing and freezing plants are pleased with current wholesale prices reported in Los Angeles. Fishermen are getting up to 7.00 pesos per kilo (about 37 U. S. cents per pound) for the 15-20 count size, and better returns are looked for when the jumbo shrimp appears in quantity.

Shrimp exports to the United States from the Mazatlan (Sinaloa) area during October totaled 18 carloads (670,575 pounds), a November 7 American consulate dispatch from that area reports. These are the first exports of the new season from that area. During the same month in 1950, only 4 carloads (136,000) pounds were exported.

Freezing plants at Mazatlan are paying 7.80 pesos a kilo (41 U. S. cents per pound) for shrimp.

The plant owners are looking forward to a more abundant supply of shrimp when the weather gets cooler. They claim that due to the number of freezing plants in the Mazatlan area and the large number of fishing boats operating, at least 1,250,000 pounds should be exported monthly to make the industry profitable.



Netherlands

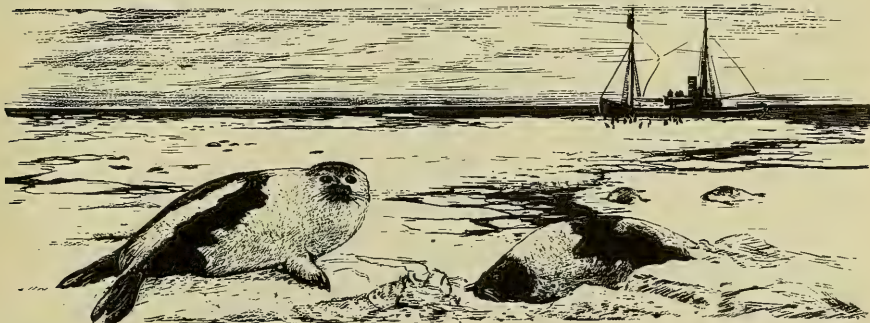
WHALING FLEET EXPANSION: A factory ship and several hunting boats will be added to the Netherlands whaling fleet. The total new investment will amount to fl.47 million (about US\$17,883,500). Money is being raised by an issue of fl.7.5 million (about US\$2,853,750) common stock. In addition the Government has agreed to buy the whale oil produced by the company in future years at a price which will be sufficient to cover all expenses, depreciation, and interest, and the payment of a dividend of six percent maximum.

The year 1950/51 was a very good one for the whaling company in Netherlands. Dividends were increased from six to eight percent, a November 15 American consular dispatch from The Hague points out.



Norway

SEAL FISHERY, 1951: This year's Norwegian seal catch yielded 369,700 animals as compared with 255,000 in 1950 and 185,600 in 1949, states an October 23 American Embassy dispatch from Oslo.



The amount of blubber produced was 3,787 metric tons as compared to 5,293 tons in 1950, and 3,371 tons in 1949. Of the total catch, 223,400 animals were Greenland seal and 146,300 were bladder-nose seal.

Since the value of last year's catch was approximately 11,500,000 kroner (US\$1,608,390), it is believed that this year's catch can be estimated at somewhere between 16,000,000-19,000,000 kroner (US\$2,237,760-2,657,340). It is stated that the market demand is good.

The principal seal fishing area was at Vestisen, ice barrier between Greenland and Spitsbergen, where approximately 60 vessels with 1,000 men participated, while 11 vessels with 300 men were engaged on the Newfoundland banks.



Republic of the Philippines

IMPORT CONTROL LAW AMENDMENT AFFECTS FISHERY PRODUCTS IMPORTS: An amendment to the Philippine Import Control Law (Republic Act 650) was issued by the President of the Philippines on August 24, 1951 (Executive Order No. 471). Imports of certain fishery and related products are affected by this action. The amendment revised Appendix "A" of Republic Act 650, the Import Control Law which became effective July 1, 1951; banned the importation of certain commodities; and provided the procedure for importing goods under ECA authorizations.

A new Annex "A" listed items completely decontrolled, together with essential items of import. Fishery products listed as completely decontrolled were canned salmon and sardines. Listed as essential items of import under this same list were canned mackerel, herring, and squid; cod liver oil; hydrogenated animal products and fish oils; fish meal; and fishery gear: specifically fish hooks and fishing rods and tackles.

Annex "B" indicates items the importation of which was immediately banned. Included among the items listed are all fresh fish, canned anchovies, mother-of-pearl, canned moss and seaweeds, and dried moss and seaweeds.

Annex "C" listed items which will be banned beginning July 1, 1952, but there were no items listed under this category of interest to the fishing and allied industries.

The amendment also establishes that goods to be imported under ECA procurement authorizations shall not be licensed by the Import Control Commission.



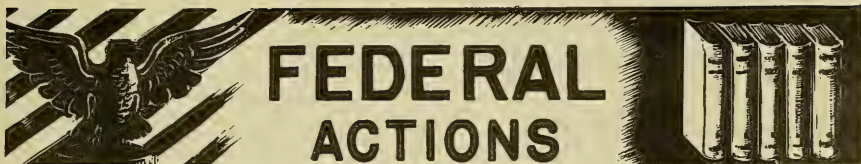
United Kingdom

FISH-HANDLING METHODS ABOARD VESSELS BEING TESTED: Survey and experimental work by the Torry Research Station at sea under commercial conditions is now in progress to test the effectiveness of the present practice in cooling fish as quickly as possible and maintaining them at 32° F. from catching to landing. A small observation cabin has been fitted on a commercial trawler, according to an article which appeared in the November 1951 issue of The Food Trade Review. This article summarizes the work carried out by the Research Station on fish under the Government's Food Investigation Organization.

"A study of the influence of exposure of the fish on deck showed that ungutted fish, if left on the deck...in warm weather, could reach temperatures which accelerate action by enzymes and bacteria so much that the fish deteriorated badly before landing even though chilling and storage in ice had been efficient.

"An analysis of the figures for fish condemned at one of the Humber ports during the year suggests that handling and stowage on many of the distant-water fishing vessels could be improved a good deal even with present equipment," according to a November 9 American Embassy dispatch which quoted parts of the article.





Department of Commerce

NATIONAL PRODUCTION AUTHORITY

ALUMINUM FOIL FIRST QUARTER 1952 ALLOTMENT: Industry's first quarter 1952 foil allotment for products in Groups 1 to 4 is 74 percent of permitted use as defined in Schedule 1 to NPA Order M-67, according to a November 15 NPA news release. Included in Group 2 are "...food products for human consumption, as defined in memorandum of agreement between NFA Administrator and Administrator of Production and Marketing Administration, United States Department of Agriculture, 16 F. R. 3410, including uncooked bakery goods and food products for human consumption to be stored in locker plants or home freezers, ..."

For details see: NPA release No. 1496.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1951, PP. 57-9.

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SCARCE MATERIALS LIST AMENDED: Notice 1 list of materials and products which are designated as scarce and which are subject to anti-hoarding provisions of the Defense Production Act was amended by NPA on November 7.

Some items added to the list are now subject both to NPA inventory controls and to the anti-hoarding sections of the Act. The action is in line with other NPA measures designed to assure a more equitable distribution of available supplies of scarce materials to all segments of the economy.

Items added to the list of particular interest to the fishing and allied industries are freon, plastic-type nylon, sulfuric acid, converted aluminum foil, cans, shipping containers, steel shipping drums, packaging closures, metal strapping, textile bags, and a large number of metals and minerals.

The 1951 amendments to the Defense Production Act provide that in designating materials as scarce the President may prescribe conditions with respect to their accumulation in excess of reasonable demands of business, personal or home consumption. In this revision of Notice 1, such conditions are spelled out to cover imported material, receipts of minimum production or sales quantities, and receipts of materials after adjustment of orders.

Section 102 of the Defense Production Act specifies that hoarding of important materials may be either that which is: (1) In excess of the reasonable demands of business, personal, or home consumption, or (2) for the purpose of resale at prices in excess of prevailing market prices, materials whose supply would be threatened by such accumulation.

The following are some of the materials listed in Notice 1 of particular interest to the fishery and allied industries:

LIST A - DESIGNATION OF SCARCE MATERIALS

*ITEMS PRECEDED BY ASTERISK HAVE BEEN ADDED SINCE ORIGINAL ISSUANCE OF NPA NOTICE 1 AS AMENDED (JAN. 10, 1951).

CHEMICALS

- * CHLORINE, GASEOUS AND LIQUID
- * FREON
- * NYLON, PLASTIC TYPE
- * SULFURIC ACID

MISCELLANEOUS

- * ALUMINUM FOIL, CONVERTED
- * CANS
- * CONTAINERS AND FABRICATED PRODUCTS MADE WHOLLY OR PARTLY FROM ALUMINUM FOIL
- * CONTAINERS, OTHER SHIPPING CONTAINERS, PACKAGES AND PACKAGING MATERIALS
- * DRUMS, STEEL, SHIPPING
- * PACKAGING CLOSURES
- * REELS AND SPOOLS, SHIPPING AND PACKAGING (WHOLLY OR IN PART OF METAL).
- * STRAPPING, METAL

MISCELLANEOUS (CONT.)

- * TEXTILE BAGS
- * UNIT PACKAGE, WRAPPERS, AND SHIPPING CONTAINERS OF ALL TYPES MADE WHOLLY OR PARTLY FROM ANY OF THE FOLLOWING FILMS AND PLASTICS:
 - CELLOPHANE, CELLULOSE ACETATE, CELLULOSE ACETATE BUTYRATE, ETHYL CELLULOSE, MELAMINE RESINS AND MOLDING POWDERS, METHYL CELLULOSE, PHENOLIC RESINS AND MOLDING POWDERS, PLIOFILM, POLYETHYLENE, POLYSTYRENE AND COPOLYMERS, POLYVINYL ALCOHOL, POLYVINYL CHLORIDE AND COPOLYMERS, POLYVINYLIDENE CHLORIDE AND COPOLYMERS, UREA RESINS AND MOLDING POWDERS.

In addition to the above, the list contains a large number of metals, minerals, and chemicals.

For details see: Notice 1 (Designation of Scarce Materials; and Withdrawal of certain Materials from Previous Designation as Scarce), as amended Nov. 7, 1951.

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CONTROLLED MATERIALS DISTRIBUTION TO RETAILERS: Retailers who customarily sell insulated copper wire, nails and other steel, copper and aluminum controlled materials to the general public will be permitted hereafter to self-certify authorized controlled material orders to obtain limited quantities of such materials under a new order issued November 19 by NPA.

For details see: M-89 (Distribution of Controlled Materials to Retailers), issued Nov. 19, 1951.

NOTE: FULL TEXTS OF MATERIALS ORDERS MAY BE OBTAINED FROM NATIONAL PRODUCTION AUTHORITY, WASHINGTON 25, D. C., OR FROM ANY DEPARTMENT OF COMMERCE REGIONAL OR FIELD OFFICE.



Economic Stabilization Agency

OFFICE OF PRICE STABILIZATION

MANUFACTURERS' ALTERNATIVE METHOD REVISED FOR DETERMINING CEILING PRICES UNDER CPR 22: Revision 1 to Supplementary Regulation 2 of CPR 22 was issued by OPS on November 21, and this makes it possible for manufacturers under the general manufacturers' order (CPR 22) to adjust their General Ceiling Price Regulation prices rather than their pre-Korean prices in making so-called "Capehart adjustments."

The addition of the overhead cost adjustment method is the only important change made by the revision of SR 2. The original regulation was issued last May, and like CPR 22, allowed adjustment for increases in labor and materials costs.

The addition of section 402 (d) (4) to the Defense Production Act by the Defense Production Amendments of 1951 has made necessary the issuance of Supplementary Regulation 17 to CPR 22, permitting the adjustment of ceiling prices in con-

formity with the requirements of the amended act. One of the differences between Supplementary Regulation 17 and CPR 22, as originally issued, is that manufacturers who use SR 17 are required to compute an overhead adjustment in addition to their labor and materials costs adjustments. This requires corresponding changes in SR 2 so that manufacturers who elect to use SR 17 may also avail themselves of the technique provided by SR 2 to preserve their General Ceiling Price Regulation price relationships. In addition, this revision of SR 2 (effective November 26) makes a number of minor changes of a technical nature.

For details see: Revision 1 of SR 2 (Alternative Method for Determining Ceiling Prices by Adjusting Ceiling Prices Established Under the General Ceiling Price Regulation Rather Than Base Period Prices, issued Nov. 21, 1951) to CPR 22 (Manufacturers' General Ceiling Price Regulation).

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CAPEHART ADJUSTMENT FOR SMALL MANUFACTURERS: Relatively small manufacturers, including some fish canners not covered by tailored regulations, were given a simpler pricing method under which they may adjust their ceiling prices in accordance with the so-called Capehart amendment to the Defense Production Act of 1950 by OPS. This adjustment method for small manufacturers (those with annual net sales volume up to \$1,000,000) pricing under Ceiling Price Regulation 22 is provided under Supplementary Regulation 18 to that regulation, effective November 26, 1951.

An eligible manufacturer who elects to price any products under this supplementary regulation must use it for all his products covered by CPR 22.

The pricing method provided for manufacturers by this action is the same as that in CPR 22. Each manufacturer applies adjustments up to July 26, 1951, as ordered by the Capehart amendment, to the prices at which he sold his goods during the period of his operations that he selects as his "base period." To figure a ceiling price for his product, a manufacturer adds his adjustments to his base period price to obtain, first, his ceiling price to his largest buying class of purchaser. Ceilings on sales to other purchasers are figured by applying the manufacturer's price differentials last used during his base period.

With the exception of changes in base periods, in the cut-off date for figuring labor and material cost increases (now July 26, 1951, for both) and in reports to be filed, this supplementary regulation adheres to the provisions of CPR 22. Generally, either of two base periods must be used--January 1 through March 31, 1950, or April 1 through June 24, 1950.

Three options are available to small manufacturers who use this regulation in the matter of labor and materials cost adjustments: (1) they may elect not to make these adjustments and use the base period price as the ceiling price for the commodity; (2) they may apply only the materials cost adjustment to the base period price; (3) they may apply BOTH the labor and materials cost adjustments to the base period price.

Basically, filing and reporting requirements of CPR 22 also apply in this supplementary regulation. However, new OPS Public Form 105, containing full instructions must be filed instead of OPS Public Form 8. In order to put into effect new ceilings under this supplementary regulation, every manufacturer must first calculate his CPR 22 ceilings and must supply certain information on Form 105 as to his calculation.

New ceilings under this supplementary regulation become effective immediately upon receipt of the completed Form 105 by the OPS.

Special provision is made under this SR for manufacturers who have already obtained ceilings on new products in relation to prices for comparison commodities, as provided under Section 32 of CPR 22. Such manufacturers may refigure these ceilings to reflect increased ceilings for the comparison commodities, as provided under this SR. Refiguring is optional if ceilings of the comparison commodities are increased by this SR. Refiguring is required if ceilings of the comparison commodities are LOWERED by this SR.

For details see: SR 18 (Optional Ceiling Price Adjustment under Section 402 (d) (4) of the Defense Production Act of 1950, as Amended, for Certain Manufacturers Whose Last Fiscal Year Net Sales Did Not Exceed \$1,000,000, dated Nov. 26, 1951) to CPR 22.

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HAWAIIAN FOOD PRODUCTS REGULATION REVISED: Originally issued to provide ceiling prices for groceries (including fishery products) sold at wholesale in the Territory of Hawaii, CPR 69 was revised on November 16 by OPS to cover all food products sold in that area. This revision makes no substantial changes in the provisions of CPR 69 as originally issued in its application to the wholesale grocery trade.

For details see: Revision 1 to CPR 69 (Food Products Sold in the Territory of Hawaii), issued Nov. 16, 1951.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, OCTOBER 1951, PP. 50-1.

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MANUFACTURERS' PRICING OF NEW COMMODITIES OR SALES TO NEW SELLERS: Ceiling prices for new commodities in new categories, for new sellers, and for sales to an entirely new class of purchaser may be determined under section 33 of CPR 22. Amendment 34 to CPR 22 issued on November 21, 1951, by OPS provides some degree of flexibility under section 33 which will now cover many instances of new goods pricing where substantially similar commodities are on the market. This amendment became effective November 26.

For details see: Amendment 34 (Broadening of Provision for Pricing Commodities in New Categories, for New Sellers and for Sales to an Entirely New Class of Purchaser, issued Nov. 21, 1951) to CPR 22 (Manufacturers' General Ceiling Price Regulation).

Amendment 24 (Broadening of Provision Relating to Manufacturers for Pricing Commodities in New Categories, and for New Sellers, issued Nov. 21, 1951) to GCPR.

NOTE: FULL TEXTS OF PRICE ORDERS MAY BE OBTAINED FROM THE OFFICE OF PRICE STABILIZATION, WASHINGTON 25, D. C., OR FROM THE REGIONAL OPS OFFICE IN YOUR AREA.

SALARY STABILIZATION BOARD

EQUITABLE COMPENSATION FOR EXTENDED WORK-WEEK OF FOREMEN AND SUPERVISORS: A general order aimed at equitable compensation for foremen and supervisors and wage earners was announced by the Salary Stabilization Board on November 7 (GSO--Regularly Extended Work-Week for Foremen and Supervisors). Under a policy regarding a regularly-extended work-week, an employer may pay a foreman or supervisor in a

comparable position, additional compensation without approval of the Office of Salary Stabilization. An employer who on or before January 25, 1951, had a practice or plan of paying foremen and supervisors additional compensation for work in excess of a normal work-week may continue with the plan.

For details see: GSO 4 (Regularly Extended Work-Week for Foremen and Supervisors), issued Oct. 29, 1951.

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INTER-PLANT INEQUITIES: A salary order dealing with inter-plant inequities was issued on November 13. It authorizes the Office of Salary Stabilization to approve adjustments in salaries and other compensation of employees subject to the jurisdiction of the Salary Board, in order to correct hardships and inter-plant inequities.

For details see: General Salary Order No. 5--Inter-Plant Inequities, approved Oct. 29, 1951.

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MAINTENANCE OF COMPENSATION RELATIONSHIPS FOR SALARIED EMPLOYEES: The Salary Stabilization Board released November 21 General Salary Order No. 6 which establishes a formula to enable employers to eliminate inter-plant inequities and to maintain historical relationships between salaried employees under its jurisdiction and wage earners under the jurisdiction of the Wage Stabilization Board.

The formula is designed particularly to permit the restoration of pay differentials between foremen and supervisors and the employees supervised by them, and will enable employers to pass on to salaried employees cost-of-living and other increases of a similar nature given to wage earners.

For details see: General Salary Order No. 6 (Maintenance of Compensation Relationships), approved October 30, 1951.

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STOCK-OPTION AND STOCK-PURCHASE PLANS FOR EMPLOYEES: A regulation relating to stock-option and stock-purchase plans for employees was issued on November 14 by the Salary Stabilization Board.

For details see: GSSR 4 (Stock Option and Stock Purchase Plans), adopted Oct. 30, 1951: also news release SSB-31, dated Nov. 14, 1951.

* * * * *

SALES EMPLOYEES COMPENSATION: A regulation regarding the compensation of sales employees was adopted on November 29 by the Salary Stabilization Board. This new regulation applies to employees subject to the jurisdiction of the Board who are employed in the capacity of "outside salesmen" and who receive compensation in the form of commissions on sales or business transactions as distinguished from bonuses within the scope of General Salary Stabilization Regulation 2. Excluded are "driver salesmen."

For details see: GSSR 5 (Compensation of Sales Employees), adopted Nov. 29, 1951.

* * * * *

CHRISTMAS AND YEAR-END BONUSES: An interpretation under salary stabilization regulations relating specifically to the payment of Christmas and year-end bonuses not directly related to profits was issued on November 9.

For details see: Interpretation 2 (Christmas and Year-End Bonuses), approved Nov. 8, 1951.

WAGE STABILIZATION BOARD

PROCEDURE FOR HANDLING LABOR DISPUTES VOLUNTARILY AND JOINTLY SUBMITTED: Disputes voluntarily submitted to the Board for a final and binding decision will not be accepted unless the Wage Stabilization Board is assured that work and production will be continued, or if interrupted, will be resumed, according to a November 4 press release issued by the Board. At the same time a procedure for handling disputes voluntarily and jointly submitted to the Board was announced.

For details see: News release WSB-134, dated Nov. 4, 1951.

* * * * *

MULTI-EMPLOYER BARGAINING NEGOTIATIONS: A resolution designed to facilitate the handling of petitions and reports involving wage adjustments under General Wage Regulations 6 and 8, in which a multi-employer group or association negotiates with a union or unions for a uniform contract was announced on November 9.

For details see: Resolution: General Wage Regulations 6 and 8 Applied to Multi-Employer Bargaining Negotiations, issued Nov. 9, 1951.

* * * * *

"EQUAL PAY FOR EQUAL WORK" RESOLUTION ADOPTED: An "Equal pay for equal work" resolution was adopted by the Wage Stabilization Board on November 15. This means that the Board "will approve increases in wages, salaries, and other compensation granted to equalize wages, salaries, and other compensation, for comparable quality and quantity of work on the same or similar operations in the same establishment, without regard to sex, race, color or national origin..." An appropriate general wage regulation embodying the policy contained in the resolution will be adopted and promulgated by the Board.

For details see: News release WSB-140, dated Nov. 15, 1951.

* * * * *

INTER-PLANT INEQUITIES FOR WAGE EMPLOYEES: A new general regulation detailing Wage Stabilization Board policies in the area of inter-plant inequity adjustments was issued by the Board on October 18.

For details see: GWR 17 (Inter-Plant Inequities), adopted Oct. 17, 1951.

* * * * *

CHRISTMAS OR YEAR-END BONUSES: Amendment 2 to General Wage Regulation 14 adopted by the Wage Stabilization Board on November 27 spells out the regulations regarding the payment of Christmas or year-end bonuses.

For details see: Amdt. 2 (Christmas or Year-End Bonuses, adopted Nov. 27, 1951) to GWR 14.

Interstate Commerce Commission

ORDER FOR LOADING FREIGHT CARS WITH CANNED GOODS AND FOODSTUFFS EXTENDED:

Interstate Commerce Commission Service Order 878, prescribing minimum loading requirements for canned goods and foodstuffs in railroad freight cars, has been extended by the Commission through May 31, 1952. This extension appeared in the Federal Register of November 30. Issued to assure more effective utilization of freight cars, the original order was scheduled to expire November 30, 1951.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, JULY 1951, PP. 80-1.

* * * * *

GRANTS EXPRESS AGENCY'S PETITION TO VACATE SUSPENSION OF REICING CHARGES:

The Interstate Commerce Commission on November 16 granted the Railway Express Agency's petition to vacate the suspension of reicing charges in Docket I. & S. 5949. This means that the proposed reicing charge hearing is cancelled and that the proposed express reicing charges become effective on December 5.

The schedule establishing certain rules and charges for reicing perishables in less-than-carload lots where water ice is used was filed with the ICC on July 6 by the Railway Express Agency, Inc. Included were fish and shellfish L.C.L. express shipments. The proposed charges range from 20 cents to \$2.70 for each package, depending on the length of the haul and the net weight of the package. The charges apply and are billed automatically upon delivery of the shipment to the carrier unless the shipment is marked "Do Not Reice for Account of Shipper."

NOTE: SEE COMMERCIAL FISHERIES REVIEW, JULY 1951, PP. 79-80.

* * * * *

RECEIVES RAILROAD FREIGHT RATE INCREASE PROTEST:

Opposition to a petition by the Nation's railroads for further hearings on their request for freight rate increases was filed with the Interstate Commerce Commission by four Federal agencies. This action, however, is taken apart from any independent action which may be taken as required by other Federal agencies.

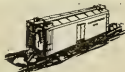
The protesting agencies are the Office of Price Stabilization, the Department of Commerce, the General Services Administration, and the Tennessee Valley Authority.

The railroads had petitioned the ICC for a 15-percent increase in freight rates. On August 2, 1951, they were awarded a 9-percent increase in the Eastern Territory (the area north of the Ohio and east of the Mississippi Rivers) and a 6 percent increase in the Southern and Western Territories and between territories. They have asked that the hearings be reopened on the grounds that the award was inadequate.

In reply to the railroads' statement that even with the increased rates granted their operating income for September 1951 was 41 percent below that of September 1950, the protesting agencies pointed out that a single month of operation is insufficient time upon which to base accurate appraisal of the effects of the granted increases.

Any judgements of findings predicated on operating data which did not include the last four months of 1951 would be speculative, the four agencies contended, and advocated that data for a still longer period be required.

Furthermore, the Federal agencies maintained, there exists at this time no condition of general emergency in railroad transportation which requires reopening of the case. They invited attention to the fact that, should such an emergency condition arise, the ICC could order hearings on its own motion.



Department of State

CERTAIN CANNED FISH TARIFFS AFFECTED BY UNITED STATES WITHDRAWAL OF FURTHER CHINA CONCESSIONS FROM GATT: Withdrawal from the General Agreement on Tariffs and Trade of certain additional tariff concessions initially negotiated by the United States with China, to be effective after the close of business on January 25, 1952, and modifications of other miscellaneous trade agreement matters were announced by Presidential proclamation on November 26, 1951. Included among the concessions withdrawn were certain canned fish items.

Certain other concessions were withdrawn from the General Agreement on October 12, 1950, because of the withdrawal of China from the General Agreement in May 1950, according to a Department of State news release of November 27. Not all the concessions initially negotiated with China were terminated at that time since other contracting parties to the General Agreement other than China claimed to have a substantial interest. Under Article XXVII of the Agreement, when a country withdraws from the Agreement, parties claiming substantial interest may request consultation. A number of countries requested consultations in regard to certain items in the China agreement. These consultations have been held and as a result it has been determined that certain fishery concessions will be withdrawn.

The fishery products on which concessions will be withdrawn are:

TARIFF PARAGRAPH	DESCRIPTION OF PRODUCTS	AGREEMENT RATE	RATE EFFECTIVE AFTER CLOSE OF BUSINESS JANUARY 25, 1952
718(A)	FISH, PREPARED OR PRESERVED, WHEN PACKED IN OIL OR IN OIL AND OTHER SUBSTANCES (EXCEPT SARDINES, ANCHOV- IES, TUNA, ANTIPASTO, BONITO, YEL- LOWTAIL, AND SMOKED POLLOCK):		
	VALUED AT NOT OVER 9 CENTS PER POUND INCLUDING WEIGHT OF IM- MEDIATE CONTAINER.....	22% AD VALOREM	44% AD VALOREM
	VALUED AT OVER 9 CENTS PER POUND, INCLUDING WEIGHT OF IMMEDIATE CONTAINER.....	15% " "	30% " "
718(B)	FISH, PREPARED OR PRESERVED, IN ANY MANNER, WHEN PACKED IN AIR-TIGHT CONTAINERS WEIGHING WITH THEIR CON- TENTS NOT MORE THAN 15 POUNDS EACH, NOT IN OIL (EXCEPT ANCHOVIES, HERRING, SALMON, SARDINES, AND FISH CAKES, BALLS AND PUDDING).....	12 % " "	12 % " " 1/
721(E)	OYSTERS, OYSTER JUICE, OR EITHER IN COMBINATION WITH OTHER SUBSTANCES, PACKED IN AIR-TIGHT CONTAINERS.....	4¢ PER LB. 2/	8¢ PER LB. 2/

1/ NO CHANGE IN RATE BY REASON OF TRADE AGREEMENT WITH ICELAND, EFFECTIVE NOVEMBER 1943.
THIS ACTION SIMPLY REMOVES BINDING OF ITEM.

2/ INCLUDING THE WEIGHT OF THE IMMEDIATE CONTAINER.

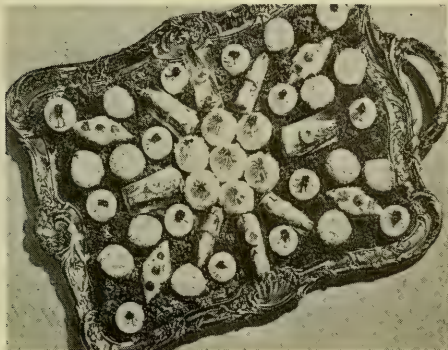
Paragraph 718(b) above covers canned tuna, not in oil; therefore this item is no longer bound under provisions of GATT. Since it is included in the Trade Agreement with Iceland, the rate is unchanged.

The proclamation also provides for a reduction in the duty on prepared or preserved frog legs imported from countries other than Cuba and entitled to most-favored-nation treatment, from 20 percent ad valorem to 12 percent ad valorem. This new rate will be effective after the close of business on December 26, 1951, and results from a preferential concession on frog legs (Tariff Paragraph 1558) made to Cuba at Geneva in 1948 and inadvertently not modified for other countries as is required in order to comply with provisions of the General Agreement prohibiting increases in margins of preference.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, DECEMBER 1950, P. 62.



CANAPÉS AND HORS D'OEUVRES



SARDINE SPREAD

1/2 CUP MASHED SARDINES
1/2 CUP GRATED EGG YOLK
1 TABLESPOON LEMON JUICE

1/8 TEASPOON WORCHESTERSHIRE SAUCE
1/4 CUP MAYONNAISE OR SALAD DRESSING

Blend ingredients together forming a paste. Spread on bread cut in desired shapes. Garnish with grated egg yolk, strips of pimiento, and parsley. This spread will cover 36 small canapés.

CODFISH BALLS

1/2 POUND DRIED SALT COD
1 CUP MASHED POTATOES
1 EGG, BEATEN
1 TABLESPOON ONION, GRATED

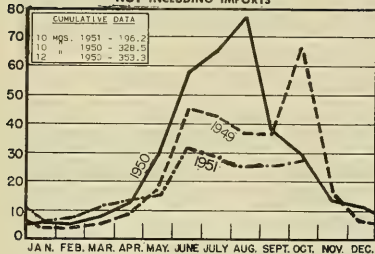
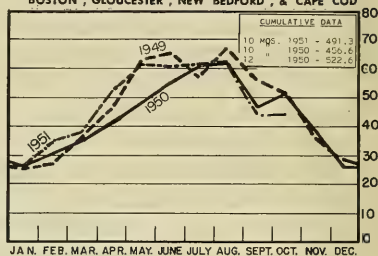
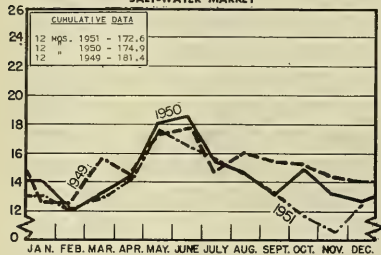
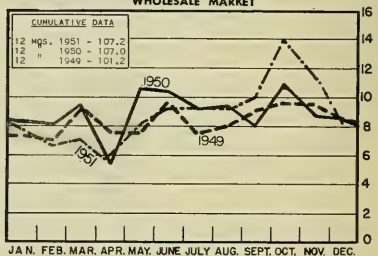
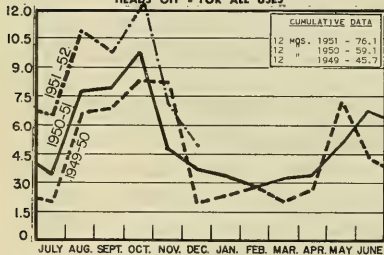
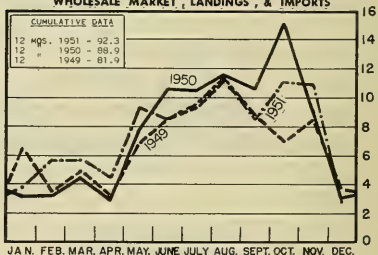
1 TABLESPOON PARSLEY, CHOPPED
DASH PEPPER
FLOUR

Soak cod overnight; drain. Boil in water until tender or freshen and cook according to directions on the package. Drain and flake. Mix cod, potatoes, egg, and seasonings together. Form into small balls and roll in flour. Fry in deep fat heated to 375° F. for about 2 minutes or until golden brown. Serve at once on colored tooth picks.

Fish and Wildlife Service tested recipes. These are several in the series of recipes using fishery products tested and developed in the Service's test kitchens.

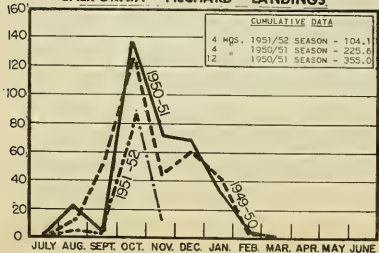
LANDINGS AND RECEIPTS

In Millions of Pounds

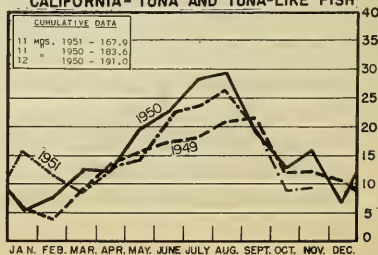
MAINE - LANDINGS
NOT INCLUDING IMPORTSMASSACHUSETTS - LANDINGS
BOSTON, GLOUCESTER, NEW BEDFORD, & CAPE CODNEW YORK CITY - RECEIPTS OF FRESH & FROZEN FISH
SALT-WATER MARKETCHICAGO - RECEIPTS OF FRESH & FROZEN FISH
WHOLESALE MARKETGULF - SHRIMP LANDINGS
HEADS OFF - FOR ALL USESSEATTLE - RECEIPTS OF FRESH & FROZEN FISH
WHOLESALE MARKET, LANDINGS, & IMPORTS

In Thousands of Tons

CALIFORNIA - PILCHARD LANDINGS



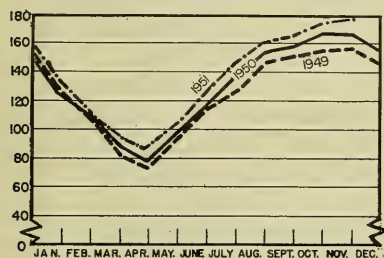
CALIFORNIA - TUNA AND TUNA-LIKE FISH



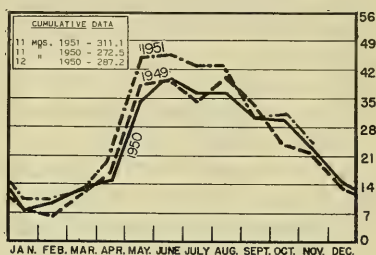
COLD STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS

In Millions of Pounds

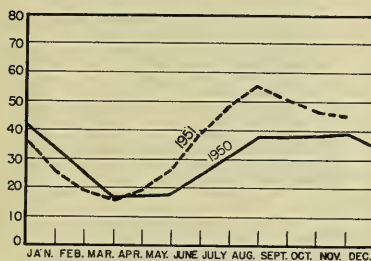
U.S. & ALASKA - HOLDINGS OF FROZEN FISH



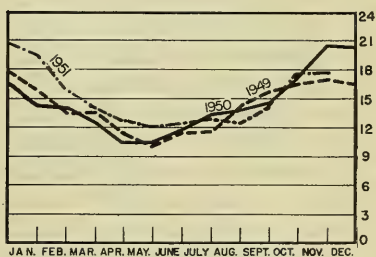
U.S. & ALASKA - FREEZINGS



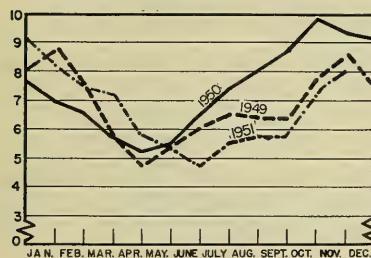
NEW ENGLAND - HOLDINGS OF FROZEN FISH



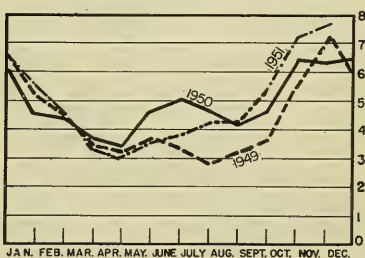
NEW YORK CITY - HOLDINGS OF FROZEN FISH



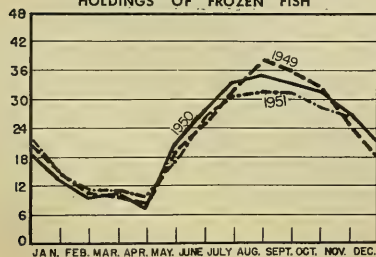
CHICAGO - HOLDINGS OF FROZEN FISH



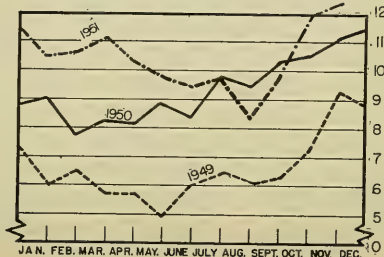
GULF - HOLDINGS OF FROZEN FISH



WASHINGTON, OREGON, AND ALASKA - HOLDINGS OF FROZEN FISH

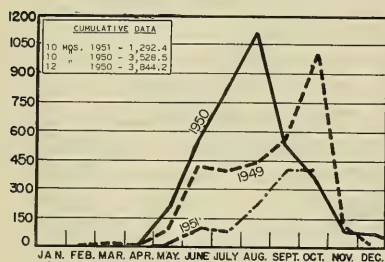


CALIFORNIA - HOLDINGS OF FROZEN FISH

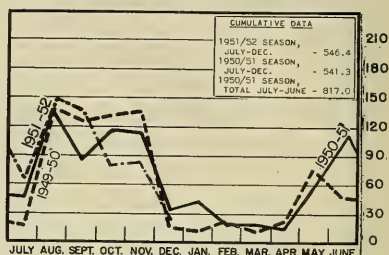


CANNED FISHERY PRODUCTS

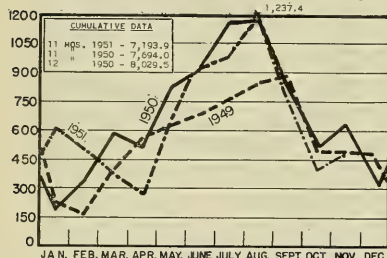
In Thousands of Standard Cases
MAINE - SARDINES, ESTIMATED PACK



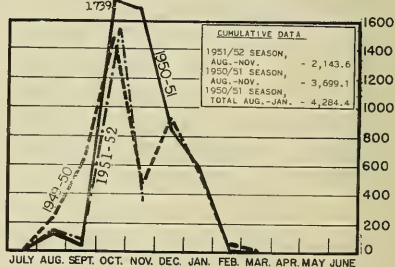
UNITED STATES - SHRIMP



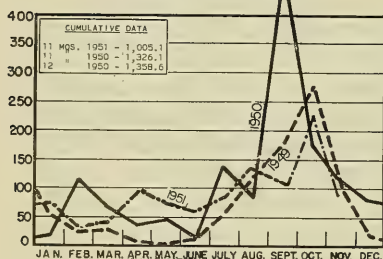
CALIFORNIA - TUNA AND TUNA-LIKE FISH



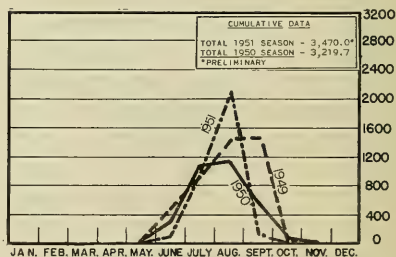
CALIFORNIA - PILCHARDS



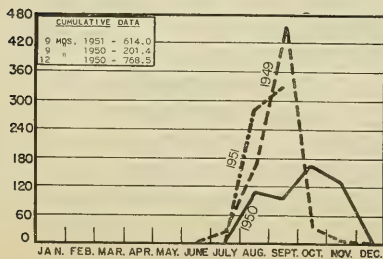
CALIFORNIA - MACKEREL



ALASKA - SALMON



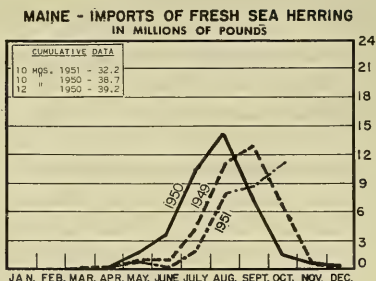
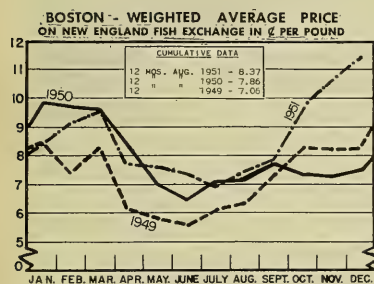
WASHINGTON - PUGET SOUND SALMON



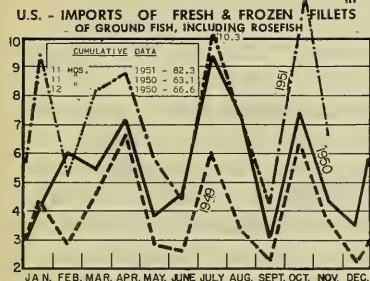
STANDARD CASES

Variety	No. Cans	Can Designation	Net. Wgt.
SARDINES	100	1/4 drawn	3 1/4 oz.
SHRIMP	48	—	5 oz.
TUNA	48	No. 1/2 tuna	7 oz.
PILCHARDS	48	No. 1 oval	15 oz.
MACKEREL	48	No. 300	15 oz.
SALMON	48	1-pound toll	16 oz.

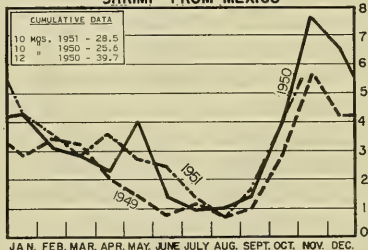
PRICES, IMPORTS and BY-PRODUCTS



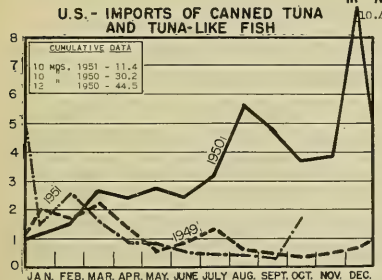
In Millions of Pounds



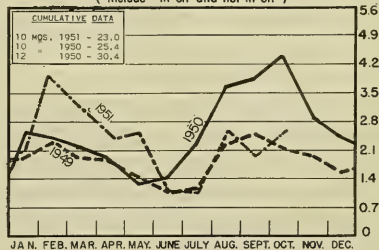
U.S. - IMPORTS OF FRESH AND FROZEN SHRIMP FROM MEXICO



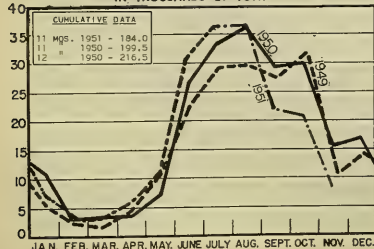
In Millions of Pounds



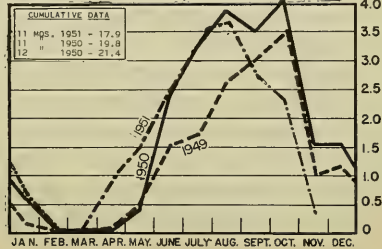
U.S. - IMPORTS OF CANNED SARDINES (Include in oil and not in oil)

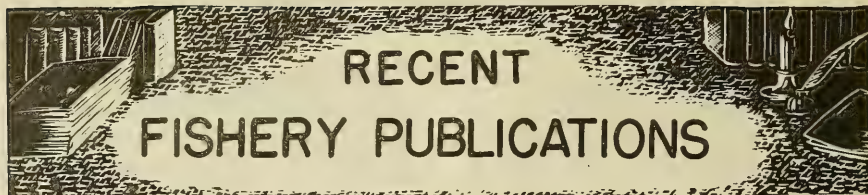


U.S. & ALASKA - PRODUCTION OF FISH MEAL IN THOUSANDS OF TONS



U.S. & ALASKA - PRODUCTION OF FISH OIL IN MILLIONS OF GALLONS





Recent publications of interest to the commercial fishing industry are listed below.

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
 SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-674	- Massachusetts Landings, June 1951, 14 p.
CFS-685	- Massachusetts Landings, July 1951, 14 p.
CFS-690	- Florida Landings, August 1951, 4 p.
CFS-693	- Middle Atlantic Fisheries, 1949 Annual Summary, 6 p.
CFS-694	- Frozen Fish Report, October 1951, 10 p.
CFS-696	- Texas Landings, September 1951, 4 p.
CFS-697	- Maine Landings, August 1951, 4 p.
CFS-698	- Meal and Oil, September 1951, 2 p.
CFS-701	- Mississippi Landings, September 1951, 2 p.

Number	Title
<u>Wholesale Dealers in Fishery Products (Revised):</u>	
SL- 3	- Massachusetts, 1950, 9 p.
SL- 6	- New York coastal area, 1951, 12 p.
SL-13	- North Carolina, 1950, 6 p.

Sep. No. 292 - Deep-Water Trawling Survey Off the Coast of Washington (August 27-October 19, 1951).

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

Fishery Statistics of the United States, 1948, by A. W. Anderson and E. A. Power, Statistical Digest No. 22, 305 p., illus., processed, 1951, \$1.25. A review of the fishery statistics of the United States for the year 1948 collected by the Service's Branch of Commercial Fisheries during 1949 is to be found in this publication. It includes data on the quantity and value of the catch of fishery products, employment in the fisheries, quantity of gear operated, the number of fishing craft employed in the capture of fishery products, and certain information on the quantity and value of the production of manufactured fishery products and byproducts, and foreign fishery trade. Statistical surveys for the 1948 data were conducted in all sections except the South Atlantic and Mississippi River States. In addition to a general review of the United States fisheries, reviews of the fisheries by geographical areas are to be found at the beginning of each section. The publication also contains detailed statistics by states, supplementary surveys, Hawaiian and Alaskan fisheries data, and a review of certain major fisheries (cod, haddock, halibut, mackerel, menhaden, pilchard, ocean perch or rosefish, salmon, tuna and whaling).

An explanation of the statistical survey procedure, a glossary of names of fish and shellfish, and illustrations of a large number of fish and shellfish and other fishery products are also included.

Postlarval Neothunnus Macropterus, Auxis Thazard, and Euthynnus Lineatus from the Pacific Coast of Central America, by Giles W. Mead, Fishery Bulletin 63 (From Fishery Bulletin of the Fish and Wildlife Service, Volume 52), 8 p., illus., printed, 15 cents, 1951. Young yellowfin tuna, frigate mackerel, and black skipjack from the Pacific coast of Central America, collected during fishing operations of the tuna clipper Alphecca in the spring of 1949, are illustrated and described in this publication. In addition to these postlarval specimens, the collections made during the 1932 cruise of the Zaca were examined and studied. From these and other data are presented observations on the spawning seasons and a key for identifying the juveniles of five species of scombrids. The Alphecca was a commercial tuna clipper and the Zaca was operated by the California Academy of Sciences.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILD-LIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE AGENCIES OR PUBLISHERS MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

Abstracts of Defense Regulations Issued Pursuant to the Defense Production Act (Through October 31, 1951), vol. 1, no. 4, 123 p., printed, \$6.00 per year. Edited and published by the Federal Register Division, National Archives and Records Service, General Services Administration, Washington, D. C. (For sale by Superintendent of Documents, Washington 25, D. C.) Official monthly list of regulations, orders, delegations of authority, and forms issued under the Defense Production Act. This publication is designed to give notification to the public concerning the regulations and the mandatory reporting requirements of all agencies of the Federal Government operating under the Defense Production Act. Wherever possible, there is presented such pertinent information as the branch or division of each agency in charge of a particular activity, the name of the officer to whom inquiries should be addressed, and the dates when reports must be filed. A brief index to the documents of the National Production Authority and the Office of Price Stabilization follows the main portion of the text.

Revision of Effect of Trade Agreement Concessions on United States Tariff Levels Based on Imports in 1949, 24 p., processed, free. U. S. Tariff Commission, Washington 25, D. C., October 1951. From time to time the Tariff Commission has issued analyses of the effects of reductions in rates of duty made by reciprocal trade agreements on the average ad-valorem equivalents. This publication is identical with that bearing the same title, published in April 1951, except that the first three tables have been revised to include the tariff concessions made by the United States at the negotiations in Torquay, which were completed in the spring of 1951. In other words, these three tables include all concessions in effect on August 1, 1951. The concessions made at Torquay, whether new or increased reductions in duty, covered a relatively small fraction of the import trade of the United States. Consequently, on the average, the rates of duty in effect on August 1, 1951, were only slightly lower than those in effect on January 1, 1951. Because of the relatively small changes in the tariff resulting from the Torquay negotiations, the Commission has not considered it worth while to undertake the large amount of work necessary to bring up to date the other seven tables (4-10) in the report published in April 1951; the original tables are again reproduced in the present revision. The present report attempts to measure the extent of concessions made by trade agreements and the effects thereof on the average ad-valorem equivalents of the duties based on the imports in 1949. The comparisons are between the rates in effect before any trade agreements were signed, and the concessions in effect on January 1, 1945, and January 1, 1951. The significance of the date January 1, 1945, is that the present trade agreements legislation provides that rates of duty in effect on that date may be reduced by

not more than 50 percent of the rate in effect at that time. The use of a single year as a base, with the application of preagreement rates, and of the agreement rates in effect on different dates, to one set of import statistics eliminates the effect on ad-valorem equivalents of price changes from year to year as well as changes in the relative magnitude of the imports of individual commodities in different periods. Subject to these qualifications the year 1949 has been used to show the effect of trade agreement concessions alone on the tariff level.

Foreign Commerce Yearbook, 1949, 683 p., printed \$2.25. Office of International Trade, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, Washington 25, D. C.) Contains compilations of foreign trade statistics and related economic and financial data for some 78 countries, including condensed fisheries production data for a few of the countries. The information represents highly condensed official data published by the respective countries, supplemented by publications of international agencies, and by information supplied by the U. S. Foreign Service and other U. S. Government departments. Appendixes provide world area and population data, value of trade per capita by countries, and U. S. equivalents of foreign weights and measures. Statistics are in most cases for the year 1948, and include prewar comparisons.

Fresh-Water Mussel Shells, the Basis for an Arkansas Industry, by W. Paul Brann, Research Series No. 9, 37 p., illus., printed. Bureau of Research, University of Arkansas, Fayetteville, Arkansas, March 1947. This is a report on the results of an investigation of the future possibilities for industrial utilization of mussel shells in Arkansas. Among the subjects covered are: raw material for button manufacturing; mussel shells from Arkansas streams; shell fishing in Arkansas; button-blank manufacturing; a market for Arkansas mussel shells; processing steps; Arkansas production of button blanks; marketing button blanks; production of novelty materials; waste material; manufacture of finished buttons; cost of processing; marketing buttons; and future possibilities.

A Guide to Marketable Fish, by R. J. Daniel (Second Edition), 68 p., illus., printed. Department of Oceanography, The University, Liverpool 3, England (obtainable from the author), 3 s. (about 42 U. S. cents), 1950. This small booklet was issued to serve as a guide to Britain's marketable fish. Discussed in the booklet are fishing grounds and methods of fishing, types of commercial fish and shellfish, diseases of fish, parasites of fish, stalingness in fish and other marketable marine animals, and the preservation of fish. A number of appendixes include extracts from acts and regulations affecting

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fishery products; Ministry of Agriculture and Fisheries retail trade names for fish; food of various sea fish; size limits and immature fish; and notes on the use of scientific names. Outline drawings of marketable fish are also to be found in this booklet.

(International Commission for the Northwest Atlantic Fisheries) Report of the First Annual Meeting with Appendices, Report No. 1, State Publication 4244, International Organization and Conference Series I, 15; 56 p. with map, printed. Division of Publications, Office of Public Affairs, U. S. Department of State, Washington 25, D. C., Sept. 1951. This is a report by the Chairman of the Commission concerning the first annual meeting held at Washington, D. C., April 2-10, 1951. The various appendices to the report include not only items pertinent to the first meeting of the Commission but also the text of the Convention of February 8, 1949, the Final Act of the International Northwest Atlantic Fisheries Conference which convened at Washington January 26 to February 8, 1949, and an outline chart of the area of the Northwest Atlantic Ocean to which the Convention is applicable.

Investigations on the Florida Spiny Lobster PANULIRUS ARGUS (Latreille), by Charles E. Dawson, Jr. and Clarence P. Idyll, Technical Series No. 2, 39 p., illus., printed. State Board of Conservation, Tallahassee, Fla. This is a report on an investigation begun in 1944 by the Marine Laboratory of the University of Miami at the request of the Florida State Board of Conservation designed to provide a basis for management of the spiny lobster fishery of south Florida. Discussed by the authors are the importance of the fishery, limits of the fishery, regulations on crawfish, fishing methods, breeding season, weight-length relationship, growth rate, and tagging and fishing intensity. The authors conclude their report with a list of recommendations for the State of Florida. They conclude that the spiny lobster stocks have probably not declined in recent years and that overfishing is not taking place.

The Marine Crayfishes (Spiny Lobsters), Family Palinuridae, of Western Australia (With Particular Reference to the Fishery on the Western Australian Crayfish, *Panulirus longipes*), by Keith Sheard, Bulletin No. 247 (Division of Fisheries - Report No. 18), 45 p., printed. Commonwealth Scientific and Industrial Organization, Melbourne, Australia, 1949. The two genera of the family Palinuridae which occur in the waters of the coastal shelf of Western Australia are the genus *Jasus*, with the species *Jasus lalandii* occurring between the Recherche Archipelago in the east and Cape Maturalstein in the west; and the genus *Panulirus*, with one species, *Panulirus longipes*, dominant between Cape Leeuwin in the south and the North-West Cape in the north, and four species, *P. ornatus*, *P. versicolor*, *P. penicillatus*, and *P. burgeri*, extending northwards from the North-West Cape

area. The commercial fishery exploits the species *P. longipes* in the waters west and north of Fremantle, off Dongara and Geraldton, and at Houtman's Abrolhos. The major part of this bulletin outlines the general biology of the latter species and describes the environment and fishing methods. The distribution, life history, population control, tagging, etc., of the commercial species *Panulirus longipes* are described. Included is a report on the spiny lobster investigations in Western Australian waters--exploration and commercial testing, technical investigations, and biological investigations. The commercial fishery in Western Australia is also discussed--fishery areas, catching methods, storage and transportation, regulation of the fishery, and statistics.

Maryland's Commercial Fishing Gears: II. The Oyster Gears, by Fred W. Sieling, Educational Series No. 25, 24 p., illus., printed. Department of Research and Education, Board of Natural Resources, Solomons Island, Md., 1950. A short description of the different types of gear used in taking oysters in the Chesapeake Bay area and certain background material related to these descriptions are to be found in this booklet. Oystering equipment used in other producing areas of the United States is described briefly for the sake of comparison. The gears and methods covered are dredging, patent tonging, and hand tonging.

Pelagic Fur Seal Research Off Japan in 1950, by Ford Wilke, Preliminary Study No. 67, 38 p., processed. Natural Resources Section, Supreme Commander for the Allied Powers, Tokyo, Japan, October 1951. (Reports may be purchased only in photostat or microfilm from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.) Research on the status of fur seals along the Japanese coast was begun in 1948 and continued in 1949 and 1950 as a result of action initiated by the Natural Resources Section. The U. S. Fish and Wildlife Service and the Japanese Fisheries Agency assisted in the investigation by providing personnel and equipment. Data collected in 1948 and 1949 were very limited, but additional research in 1950 provided more information which is presented in this report and covers field observations from March through May 1950. The author states that the investigation disclosed more effective measures are necessary for the enforcement of regulations pertaining to the catch of fur seals and the disposition of pelts and products thereof. Included in this report are discussions on the age, growth, and pregnancy of fur seals; distribution; abundance; relationship of the seal herds; food habits; pelagic seal hunting; and poaching.

The Phyllosoma Larvae of the Spiny Lobster PANULIRUS ARGUS, by John B. Lewis, Contribution No. 52 (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 1,

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no. 2, pp. 89-103, August 1951), 14 p., illus., printed. The Marine Laboratory, University of Miami, Coral Gables, Fla. The phyllosoma larvae of the spiny lobster (*Penaeus argus*, Latreille) were obtained from plankton hauls made in the western Atlantic and Caribbean. Eleven stages were identified of which the last is probably the final stage before metamorphosis. Stage one was obtained from freshly-hatched eggs. It was shown that the larvae may be carried long distances by currents and that some of the larvae taken off the Florida coast were hatched much farther south, according to this report.

A Report on the 1950 Albacore Fishery of British Columbia (THUNNUS ALALUNGA), circular No. 23, 7 p., illus., processed. Pacific Biological Station, Nanaimo, B. C., Canada, 1951. Because of the interest shown in the first three circulars on the British Columbia albacore fishery, this fourth report was prepared. Primarily for the use of those actively engaged in the various phases of the fishery, it contains sections on results from length measurements at three ports of landing, the examination of log-book records made by fishermen, and a report of the 1950 tagging operations. A section on offshore water temperatures is included from information supplied by the Pacific Oceanographic Group.

Spawning and Setting of Oysters in Relation to Seasonal Environmental Changes, by Robert M.

Ingle, Contribution No. 57 (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 1, no. 2, pp. 111-135, August 1951), 25 p., illus., printed. The Marine Laboratory, University of Miami, Coral Gables, Fla. This report discusses the environmental factors controlling the spawning of oysters in the Apalachicola area, which were investigated with particular regard to temperature. The principal literature is reviewed. Regular observations of temperature, salinity, and spat-fall intensity were made at nine stations covering a distance of approximately 30 miles of Apalachicola Bay. Isolated spawning did not occur below temperatures of 22.5° C. Mass spawning took place only when the temperature rose to at least 26.0° C. On two occasions, mass spawning occurred simultaneously at all stations in the eastern part of the Bay but not in the western part. The average temperature is lower in the western part than elsewhere and also fluctuates more rapidly. Since the temperature necessary for mass spawning is higher than reported elsewhere in the United States, the possibility has been suggested that there are physiological races of oysters. In the absence of observations on inheritance of this characteristic when oysters are transplanted, it is considered that the interaction of a number of environmental factors upon the maturing gonad may modify the temperature reaction and that it is not necessary to postulate racial differentiation.

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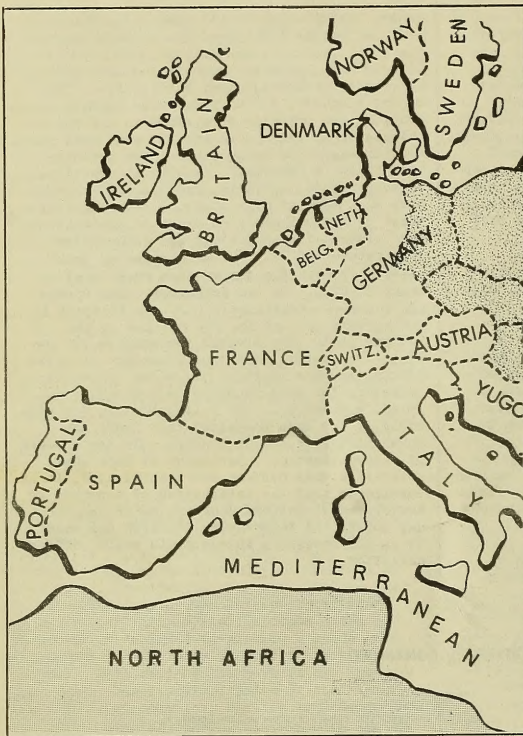
An important factor in France's high level of fisheries production during 1948 and 1949 was the reconstruction and modernization of the French fishing fleet

that was undertaken immediately after World War II and is now nearing completion, according to Fishery Leaflet 381, Fisheries of France.

This publication presents data on France's fisheries--production of marine fish; general marketing problems; recent marketing trends and prices; consumption; fish canning; salting and smoking; byproducts; foreign trade; and technical advances.

At present, problems of production are considered by the fisheries industries of France to be secondary to the problems of marketing, the author of the publication points out. Considerable attention is being given to improving transportation facilities, especially by expanding the use of refrigeration and stimulating the demand for fish by advertising and education.

For free copies of Fishery Leaflet 381, write directly to the Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C.



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